DOCKETED	
Docket Number:	21-TRAN-03
Project Title:	Zero Emission Vehicle Infrastructure Barriers and Opportunities
TN #:	242220
Document Title:	Presentation - Electric Vehicle Charging Infrastructure Reliability Workshop
Description:	N/A
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/8/2022 11:10:18 AM
Docketed Date:	3/8/2022

California Energy Commission

Electric Vehicle Charging Infrastructure Reliability Workshop

March 11, 2022

Workshop Agenda

- Introduction
  - Housekeeping
  - Commitment to Diversity
  - Workshop Goals
- Background
  - Definitions
  - Clean Transportation
  - Reliability Standards
- Measuring Reliability
  - Potential Metrics
  - Data Collection Methods
  - Tiered Standards
- Presentations
  - Tesla
  - Cool the Earth
  - Ford Motor Company
  - Flo
  - ChargePoint
- Q&A and Public Comment

Introduction

Introduction - Housekeeping

- Workshop is being recorded
- Workshop Event Webpage: https://www.energy.ca.gov/events
- Virtual Participation through Zoom
  - Q&A period after the main presentation
  - Raise Hand or Q&A feature
- Written Comments to Docket # 21-TRAN-03: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=21-TRAN-03
  Deadline: Friday, April 1, 2022

Introduction - 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 commitment, 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 to understand how to apply for funding from CEC's programs;
- Survey participants to measure progress in diversity outreach efforts.

Introduction - Diversity Survey

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 of diverse groups.

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 table to access the survey.

Survey will be closed at the end of the day.

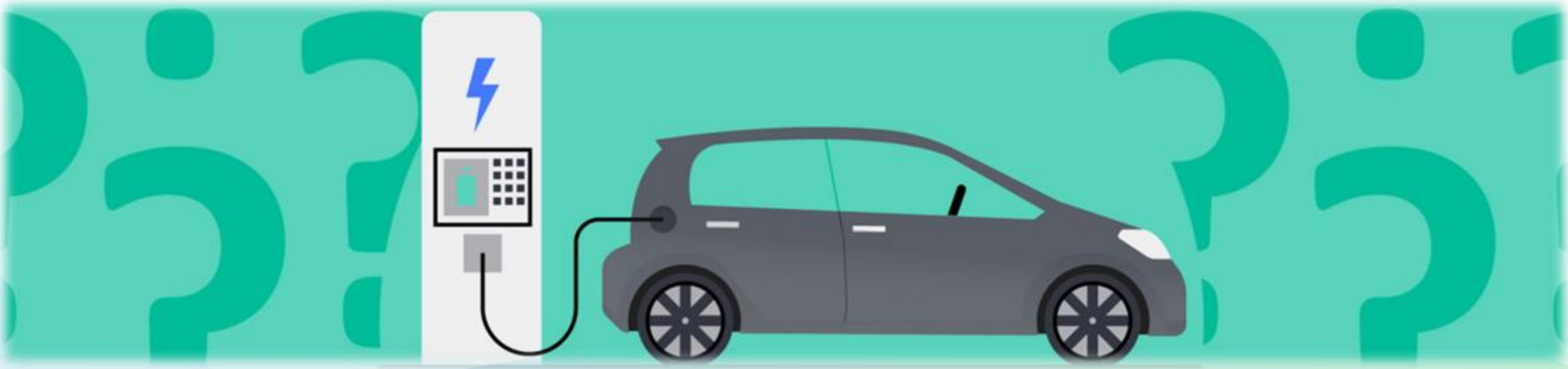
Survey Link:
https://forms.office.com/Pages/ResponsePage.aspx?id=RBI6rPQT9k6NG7qicUgZTmWqlGAqr0JNux5TMCEdoEBURTJFUVI5UVhTQUgwQldGQlo4SUxGTjdDWi4u

Introduction - Workshop Goals

This workshop seeks to gather stakeholder feedback on how to answer two questions related to reliability.

1. How to define and measure reliability, and whether/how to publish reliability metrics?

2. How to set reliability standards for EV charging infrastructure funded by the CEC?



Background

Definitions

1. User Experience is the overall experience of drivers that use public charging infrastructure to charge their electric vehicle (EV).
2. EV charging infrastructure reliability (charger reliability) refers to any element that must be operational to successfully charge an EV at a publicly available EV charging station. This includes hardware and software.

Clean Transportation Program

- Established in 2007 by Assembly Bill 118 (2007).
- Extended to January 1, 2024 by Assembly Bill 8 (2013).
- Provides approximately $95 million of funding per year through 2023.
- Investment Plan to determine funding allocations across various categories.

Reliability Standards

The Energy Commission has already begun incorporating reliability standards in recent grant solicitations. Recently, the REV and REACH solicitations included the following language on reliability:

> *"The equipment must be operational at least 97 percent of the standard operating hours of the charging facility for a period of 5 years from commissioning. It will be the recipient's responsibility to demonstrate this uptime requirement is met."*

Those solicitations also listed "extended warranty or agreement for operation, maintenance, or servicing of equipment for up to five years" as eligible costs and required an operation and maintenance plan as part of the application package.

Measuring Reliability

Impacted Chargers

Should the CEC seek to collect, aggregate, and publish reliability metrics for the full network of public chargers in California (both CEC funded and non-CEC funded)?

- If so, how can this be done?
- What are feasible metrics for evaluating reliability?

Should the CEC only focus on CEC funded chargers?

- How long should the reporting period and reliability standards be set for?
- What are feasible metrics for evaluating reliability?

Reporting

Who is responsible for reporting?

- Grant Recipient
- Site Host
- Network Provider

How is data reported?

- Periodic Reporting (e.g. Monthly or Annually)
- Application Programming Interface (API)
- Other?

Data Collection Methods

Owner / Operator Remote Monitoring	• Charger • Grid • Payment Systems
Third-Party Remote Monitoring	• OEM In-Vehicle Telematics
Manual inspection	• Crowdsourcing via App • Inspections
Suggestions?	

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Consideration of Tiered Standards

Should there be different reliability standards / metrics / reporting requirements for Level 2 and DCFC?

Level 2 Chargers

DC Fast Chargers

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Presentations

Public Comment

Public Comment
Questions

Zoom Participants
- Use “raise hand” feature to make verbal comments
- Use the “Q&A” feature to type your question

Telephone Participants
- Dial *9 to raise your hand
- Dial *6 to mute / unmute you phone line

1. How to define and measure reliability and how to publish metrics.
2. How to set reliability standards in funding opportunities.
3. What lessons learned can help build reliable charging networks?
4. What metrics that can be feasibly collected?
5. Are there publicly available data sets that can better inform the CEC’s understanding of the reliability of existing EV charging infrastructure?
6. How can we ensure inoperable hardware is reported and information on down chargers is reported to consumers?

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Thank You!