

**DOCKETED**

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<b>Project Title:</b>	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
<b>TN #:</b>	236289
<b>Document Title:</b>	Presentation - Draft Solicitation Concept for Interoperability Testing Events Request for Proposals
<b>Description:</b>	By Matt Alexander - January 19, 2021
<b>Filer:</b>	Spencer Kelley
<b>Organization:</b>	California Energy Commission
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# **Draft Solicitation Concept for Interoperability Testing Events Request for Proposals**

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Fuels and Transportation Division  
January 19, 2021



# Workshop Agenda

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- Welcome and Introductions
  
- Interoperability Testing Events Overview
  - RFP Concept and Background
  - Primary Objectives
  - Relation to Vehicle-Grid Innovation Lab (ViGIL) Solicitation
  
- Directed Questions
  
- Open Discussion



# Housekeeping

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- Workshop is being recorded
- Workshop Event Webpage:  
(Insert link when ready)
- Virtual Participation through Zoom
  - Q&A period after main presentation
  - Raise Hand or Q&A feature
- Written Comments to Docket # 19-TRAN-02:  
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-TRAN-02>  
**Deadline: Tuesday, February 2, 2021 by 5:00 p.m.**



# Commitment to Diversity

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The California Energy Commission (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 in understanding how to apply for funding from the CEC's programs.
- Survey participants to measure progress in diversity outreach efforts.



# 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 tablet to access the survey.

Survey will be closed at the end of the day.

Survey Link: <https://forms.office.com/Pages/ResponsePage.aspx?id=RBI6rPQT9k6NG7qicUgZTr-yTq0EPzxCrHqjo8xgsAVUQzgwT1pORTIQOUo4NVJaMDBSS1hCOERLQy4u>



# Clean Transportation Program

- Proposed solicitation will award a contract funded by the **Clean Transportation Program**
  - Formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program
- Established by Assembly Bill 118 (Nunez, 2007)
- Has an annual budget of approximately \$100 million
- Extended to January 1, 2024 by Assembly Bill 8 (Perea, 2013)



# Clean Transportation Program

*“...to develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies.”*

- California Health and Safety Code 44272(a)

## Complementary goals:

- Improve air quality.
- Invest in low-income and disadvantaged communities.
- Promote economic development.
- Increase alternative fuel use.
- Reduce petroleum dependence.





# **Draft RFP Concept for Interoperability Testing Events**



# Background

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**The Challenge:** Ensure charging hardware and software work as intended, and the various combinations of chargers and vehicles in the market are compatible.

**Proposed Solution:** Establish a recurring forum to convene key stakeholders. Stakeholders may conduct informal interoperability tests, develop and finalize products, and conduct implementation testing and test tool development for charging standards and protocols.

**End Results:** Support interoperability testing, develop products, implement standards, collaborate, share knowledge, and promote a more competitive market for advanced products.



# Draft Concept Overview

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- Provide interoperability testing for products and standards at any stage of development (for light-, medium-, and heavy-duty on-road sectors)
- Goal is to support product development and standards implementation in a collaborative, low-risk environment
- Maximum of \$1 million available in a Request for Proposals (RFP) that would result in an agreement term of at least 3 years
- Host approximately 3 annual Interoperability Testing Events in California



# Primary Objectives

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1) Provide a venue for stakeholders to troubleshoot products, including any of the following:

- Testing for light-, medium-, and heavy-duty on-road vehicles and associated charging equipment and software
- Finding inconsistencies in implementation that would inhibit interoperability and successful operation in the real world
- Determining whether more research and development needs to occur
- Determining if the products are ready to move on to conformance testing and commercialization



# Primary Objectives (cont.)

- 2) Provide a venue for stakeholders to conduct implementation testing and test tool development for charging standards and protocols
- Include testing for communications standards and protocols including, but not limited to: ISO 15118, Open Charge Point Protocol (OCPP), and Open Automated Demand Response (OpenADR)
  - Include testing for security measures, including but not limited to certificate handling and interoperable Public Key Infrastructure
  - Catch the “edge cases” and discover potential flaws in software protocols and standards implementations
  - Encourage collaboration for standards implementations and test tools
  - Foster industry acceptance and buy-in on new standards and test tools



# Primary Objectives (cont.)

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- 3) Provide structure for product roadmaps to prepare for annual testing events
  - Set goals and milestone markers for companies to develop their products with the knowledge that they can test with other companies and stakeholders



# Primary Objectives (cont.)

- 4) Establish a forum for knowledge sharing through a conference component
  - Discuss key topics surrounding the industry, such as medium- and heavy-duty electrification, security protocols, charging interoperability, and more
  - Engage a variety of stakeholders
  - Could include various formats, such as keynote speakers, panel discussions, and presentations



# Primary Objectives (cont.)

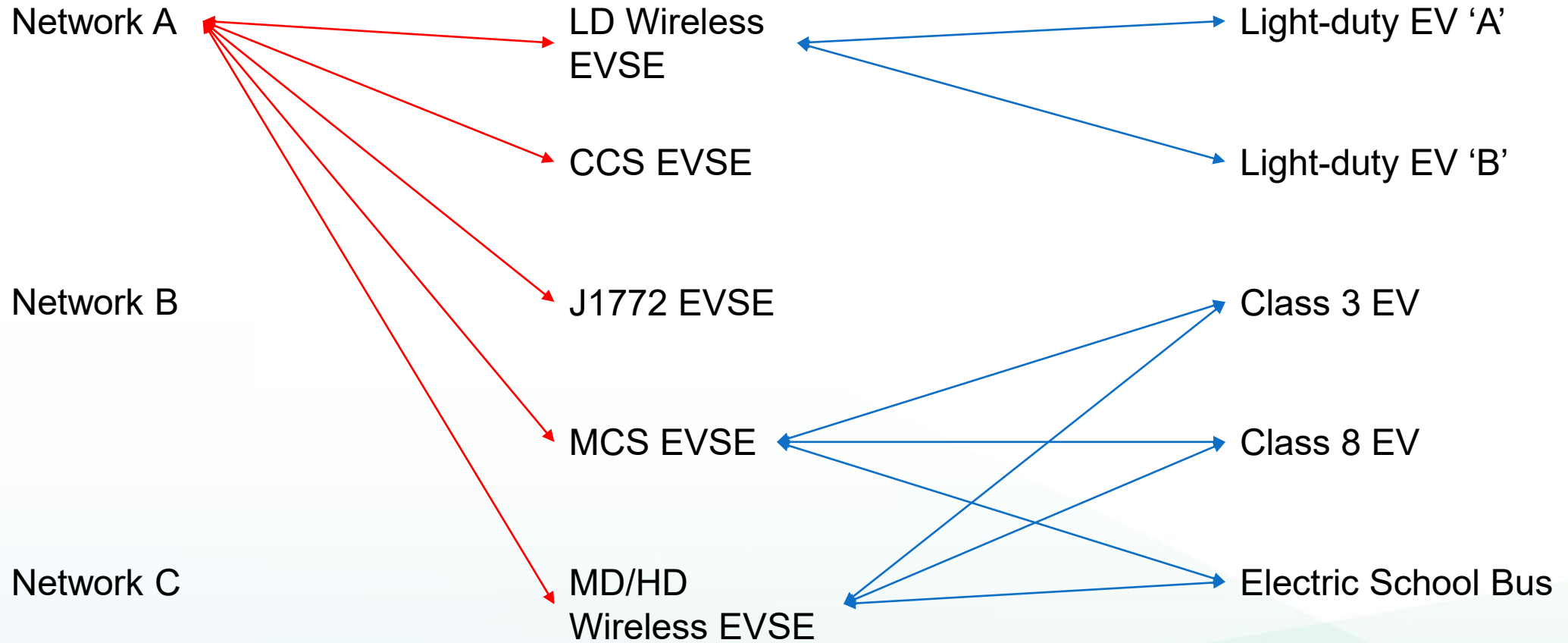
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- 5) Lower the barrier for stakeholders to participate in these events
- Reduce or eliminate registration fees
  - Reimburse costs that would encourage participation from around the country and world (e.g., costs associated with demonstrating and testing products at the forum)
  - Create a collaborative environment for any company to participate regardless of size or stage of development





# Example of Collaborative, Low-Risk Testing

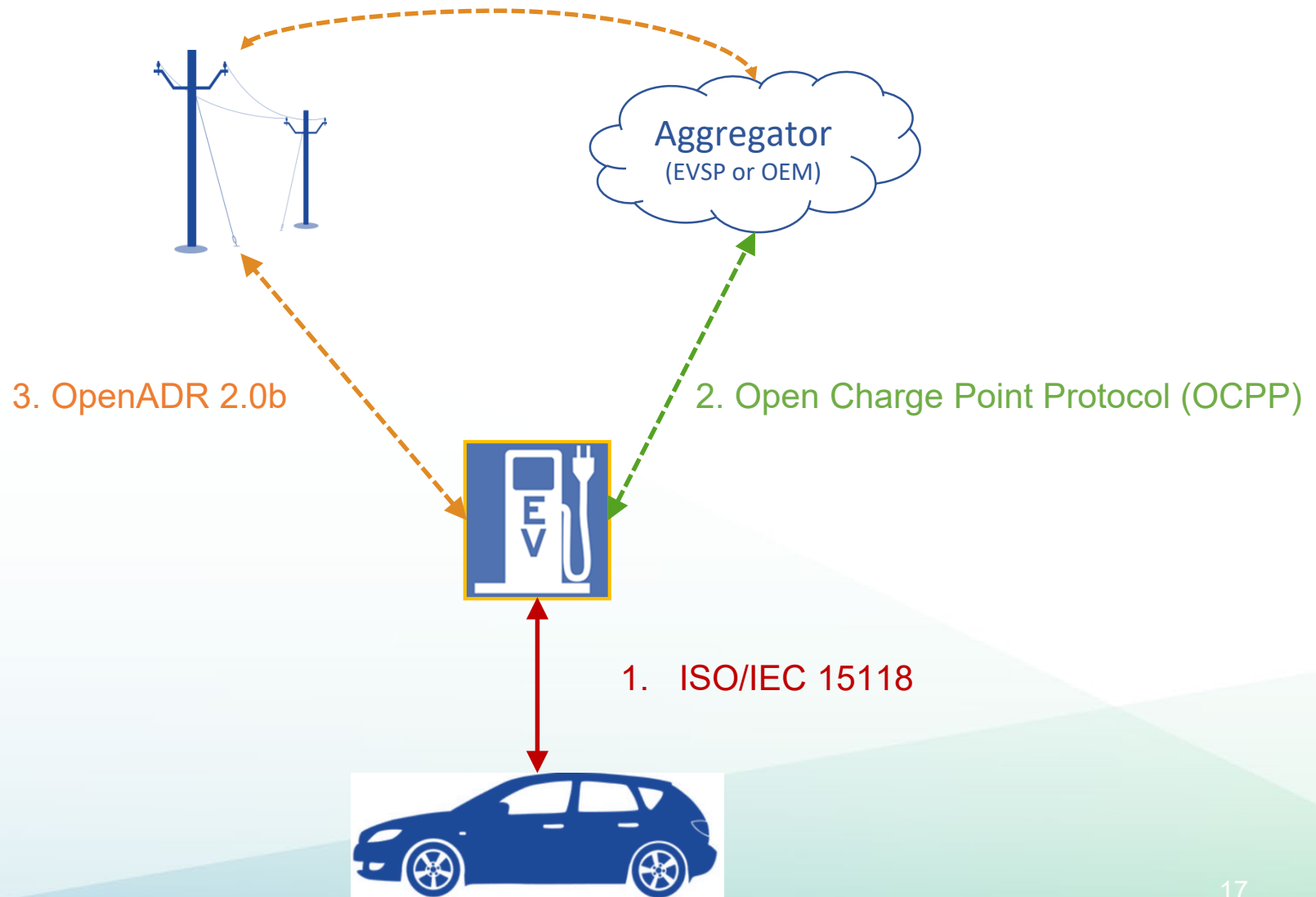


Open Charge Point Protocol 2.0.1 Testing

ISO 15118-20 Testing



# Capturing the Entire Charging Ecosystem





# Relation to ViGIL GFO

## Interoperability Testing Events RFP

- Testing for products at any stage of development
- Implementation testing and test development for charging standards and protocols
- Awardee would organize interoperability testing in informal, collaborative setting
- **Goal is to support product development and standards implementation with a focus on interoperability**

## Vehicle-Grid Innovation Lab (ViGIL) GFO

- Testing for final-stage products ready for commercialization
- Testing for industry standards
- Awardee would conduct conformance testing in formal lab setting
- **Goal is to support certification and release advanced products into the market**



# Directed Questions



# Overall Impact

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- 1) Would this type of event support the timely and cost-effective commercialization of advanced products, a diverse and competitive market for these products, and an interoperable charging ecosystem?
  - a) What is the need for or benefit of public funding of such events?
  - b) What should be included to enhance or improve the solicitation concept to better achieve the solicitation's goals?



# Structure of Annual Events

2) What should a successful and effective annual event include? For example:

- a) **Representation** – What types of participants, and how many, would be necessary for success? How can broad participation and inclusion be encouraged? How should an agreement ensure these goals are met?
- b) **Technical requirements** – What experience is required of an event organizer for success? What facility needs would be required? What other technical considerations should be included?



# Structure of Annual Events (cont.)

2) What should a successful and effective annual event include? For example:

- c) **Format** – What should be the duration of a testing event? How should events be structured to maximize success? How should the standards, hardware, etc. to be tested at each event be determined? How should matches between participants be determined?
- d) **Outcomes** – Are there any key outcomes that these events should strive to achieve (e.g., facilitate the industry adoption of a new standard)?



# Funding

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- 3) Is a maximum of \$1 million sufficient to host 3 annual interoperability testing events?
- a) If not, what is feasible with this amount of funding?
  - b) If this amount of funding is more than sufficient, would there be a benefit to more or more-frequent events? How many annual events could feasibly be executed with this budget?





# Funding (cont.)

- 3) Is a maximum of \$1 million sufficient to host 3 annual interoperability testing events?
- c) Should participant fees or other sources of funding (e.g., sponsorships) be allowed or required to supplement CEC funding? What is the best use of public funding in these events?
  - d) What project cost categories should be eligible for CEC funding or match share?
  - e) What are your estimates for the budget allocations for organizing these events (e.g., securing venues, renting equipment, facility requirements), reimbursement for shipment costs of vehicles and charging equipment, and administrative/labor fees?



# Eligibility

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4) Should there be requirements for applicant eligibility?



# Conference Component

5) What would you like to see in the conference component? For example:

- a) **Format** – Is the preference for a mix of keynote speakers, panel discussions, and presentations? Is there anything else that should be included?
- b) **Content** – What topics are most important for the annual conferences in order to cover and discuss the latest trends and challenges in the EV charging industry?



# Open Discussion





# Q&A / Public Comments

## Zoom Participants

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

## Telephone Participants:

- Dial \*9 to raise your hand
- Dial \*6 to mute/unmute your phone line.

## Written Comments

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-TRAN-02>

**Deadline for comment: Tuesday, February 2, 2021 by 5:00 p.m.**



# Submit Comments to Docket 19-TRAN-02

## Electronic Commenting System

Visit the comment page for this docket at:

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-TRAN-02>

## Comment by E-mail

E-mail: [docket@energy.ca.gov](mailto:docket@energy.ca.gov)

Subject Line: "Interoperability Testing Events RFP Concept"

\* If answering or providing comments to the specific questions included in this presentation, please reference the slide number or question.

**All comments due by 5:00 pm on February 2, 2021**



# List Serv Notifications

Subscribe to Transportation Energy List Servers to receive updates on the Clean Transportation Program and upcoming solicitations:

[https://ww2.energy.ca.gov/listservers/index\\_cms.html](https://ww2.energy.ca.gov/listservers/index_cms.html)

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- [schoolbusprogram](#) - School Bus Replacement Program
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- [vgi\\_communications](#) - California Vehicle-Grid Integration Roadmap Update
- [fuelswatch](#) - Weekly Fuels Watch Report
- 
- [petroleum\\_watch](#) - Monthly California Petroleum Watch (Analysis) Newsletter



# Staff Contact Information

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**Thank you for participating remotely!**