

DOCKETED

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Charging Interoperability and Collaboration Yard Pre-Solicitation Workshop

Fuels & Transportation Division

Presenters: Taylor Nguyen, Vincent Weyl

14 November 2024 | 10:00am - 12:00pm



Welcome

Pre-Solicitation Workshop:
**Charging Interoperability
and Collaboration Yard**

We'll begin at **10:02**

10:02 | Housekeeping, Purpose

~10:15 | Project Requirements

~11:00 | Funding & Eligibility

~11:15 | Proposed Schedule

~11:20 | Public Comments

Opportunities for live feedback and Q&A throughout.



Housekeeping

- Slides are available on the workshop [event page](#)
- We will record this workshop and post the recording to the link above
- During the workshop, use the **Q&A box** for written questions
- **We encourage live feedback, questions, and back and forth!**
 - Phone: *9 to raise/lower hand, *6 to unmute/mute
 - Zoom: Click **Raise Hand** and we will enable your audio
- Please state your name and affiliation when commenting.



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.



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=RBI6rPQT9k6NG7qicUgZTtQ-G7GrbGJFmZJPv38ckjJURVhGM0NSUU1FSDJTVDU0TjdBWE8zNUEzUy4u): <https://forms.office.com/Pages/ResponsePage.aspx?id=RBI6rPQT9k6NG7qicUgZTtQ-G7GrbGJFmZJPv38ckjJURVhGM0NSUU1FSDJTVDU0TjdBWE8zNUEzUy4u>



Workshop Purpose

- **Stakeholder feedback** on draft solicitation project proposals for Charge Yard covering:
 - Project Requirements
 - Applicant Eligibility
 - Proposed Funding
 - Eligible Costs



The Charging Ecosystem

Charging ecosystem general architecture (please reference the CEC's [Interoperability Statement](#)):



- Long term goal: **Broad interoperability**, meaning a future where any driver with any car can easily charge at any charger on any charging network.
- Broad interoperability requires interoperability across all individual links.



Goal of Charge Yard Proposal

- Charge Yard aims to establish an industry-recognized lab to conduct interoperability and conformance testing
- Provide an open and neutral space for industry collaboration, knowledge sharing, exploration of next-generation use cases
- Support the development of interoperability standards



Proposed Project Requirements

Proposed Project Requirements

1. Physical Space
2. Interoperability Testing
3. Operations & Governance
4. Standardized Conformance Testing Protocols
5. Bidirectional Charging
6. Data Collection, Reporting, Dashboard
7. Industry Collaboration Events
8. Performance Criteria



1. Physical Space

1. Facility must be located in CA and may consist of multiple locations.
2. Indoor testing space at a minimum be sized to accommodate:
 - a) 12 EVSE and 4 EVs operating concurrently
 - b) 25"(W) x 20"(D) x 100"(H) EVSE in the indoor testing space
 - c) An entrance size of 85"(H) x 90"(W) to the indoor testing space
3. Sufficient electrical capacity to fully power and test at least a 150kW charger.



2. Interoperability Testing (1/2)

1. On an annual basis, procure at least 12 EVSE to be semi-permanently installed on-site, including a minimum of:
 - a) 5 AC EVSE, 6 DC EVSE, and 7 different manufacturers
 - b) 2 x V2G Root Certificate Authorities
 - c) OCPP 2.0.1 certification for EVSE



2. Interoperability Testing (2/2)

2. Procure on-site test tools
 - a) At minimum support ISO 15118 testing for products using J1772/CCS or J3400/NACS connectors
 - b) The test bed must support simultaneous multi-port testing for multi-port EVSE
 - c) Optionally offer ISO 15118 conformance and certification testing using these tools



3. Operations & Governance

The applicants must:

1. Provide detailed plans covering:
 - a) Cost recovery, financial sustainability
 - b) Fees – for use, subscription, testing events, possible certification services
 - c) Operations for a 5-year term and beyond
2. Set up an advisory committee
 - a) Consisting of various industry representatives
 - b) Meet once per month
3. Detail the committee's members, roles, engagement plans for CAM approval



Q&A: Physical Space, Interop., Operations

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
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1. How should CEC support testing MDHD applications at Charge Yard?
2. Does the required # of AC and DC chargers make sense and is the minimum number of chargers required from different manufacturers sufficient to establish a baseline for interoperability?
3. Should the Testing Tools be certified for conformance (e.g., CharIN CCTS)?



4. Standardized Conformance Testing Protocols

The applicant shall work with relevant industry entities to achieve standardized:

1. Test cases for ISO 15118-2 and -20
2. Test cases for OCPI 2.2.1+
3. Methods, tools, certification, and/or program to run the above test cases
4. Test cases and methods to be reviewed by advisory committee

Test case development does not need to start from scratch and is eligible for CEC funding.



5. Bidirectional Charging and Advanced Use Cases (1/2)

1. Support testing of end-to-end bidirectional charging
 - a) Including grid-interactive and islanded operation
2. Support at minimum:
 - a) Interoperability testing of ISO 15118-20
 - b) Testing for bidirectional communication using OCPP 2.1+
 - c) End-to-end bidirectional testing
 - i. Demonstrate bidirectional charging in response to grid signals



5. Bidirectional Charging and Advanced Use Cases (2/2)

3. Host at least 1 V2X testing event annually
4. Support testing of automated load management solutions
5. Optionally support testing with distributed energy resources, battery energy storage systems, next generation technologies, and relevant charging use cases



Q&A: Standardized Conformance Testing Protocols, V2G

Zoom Participants

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1. Any other next generation technologies or advanced charging use case to consider testing?



6. Data Collection, Reporting, Dashboard

1. Collection: Collect data on all testing with on-site test tools and resident EVSE
 - a) Includes industry collaboration events
 - b) Data shall include protocol version, transport layer security version, failure cause, charge success and failure rate by test case
2. Report: Publish anonymized and aggregated data in a public report twice a year
 - a) For events, 4 months after
3. Dashboard: Maintain a publicly available and internet-accessible dashboard tracking # of EVs & EVSE tested



7. Industry Collaboration Events

During project term:

1. Host at least 3 on-site interoperability testing events annually
 - a) V2X testing events count as 1
2. Host at least 2 on-site non-testing events annually
 - a) e.g. – workshops, conferences, discussions



8. Performance Criteria

Annually:

1. Report findings to the CEC on interoperability testing
 - a) On the top 10 light-duty EVs sold in CA
 - b) Using minimum 10 EVSE
 - i. 100 minimum interoperability reports
2. Provide report to the CEC on the state of interoperability
3. Provide report to the CEC on the state of bidirectional charging



Q&A: Data & Reporting, Industry Events, Performance Criteria

Zoom Participants

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1. Any other data we should consider collecting?
2. Are the proposed annual 3 on-site interoperability testing events realistic to achieve? In terms of funding?
 - a) Should CEC specify size/scope of event?
3. Interoperability report on 10 EVs x 10 EVSE: is this realistic?
4. Should the CEC further specify annual performance reporting?



Proposed Funding & Eligibility

- Total funding:
 - \$3.5 million
 - 50% minimum match share
- Solicitation open to:
 - Private or public entities
 - Universities and investor-owned utilities are not eligible
- Minimum project term:
 - 5 years



Proposed Eligible Costs

- Facility planning, design, and engineering
 - Includes facility installations and modifications
- Facility lease expenses during the agreement term
- Training & labor expenses
- Testing hardware
- Testing software



Q&A: Proposed Funding and Eligibility

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1. Is the maximum project award of \$3.5 million sufficient?
2. Is the match funding requirement reasonable?



Proposed Schedule

Activity	Action Date (Tentative)
Solicitation Posting	March 2025
Pre-Application Workshop	April 2025
Deadline to Submit Applications	June 2025
Anticipated Notice of Proposed Awards Posting	September 2025
Anticipated CEC Business Meeting Approval	October 2025



Public Comment/Discussion Period

Zoom Participants

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Written Comments

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-EVI-06>

Deadline for comment: Friday, November 22, 2024 by 5:00 pm.



Please submit written feedback!

Continued development of Charge Yard is subject to public feedback.

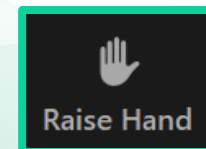
Please submit written comments to docket 22-EVI-06

- Comment deadline: **22 November 2024**
- [Submit online](#) and include “**Charge Yard**” in title
- Or email docket@energy.ca.gov with subject “22-EVI-06 Charge Yard”

Thanks for your participation and feedback! **Any last comments or questions?**

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Thank You!