DOCKETED	
Docket Number:	22-EVI-06
Project Title:	Vehicle-Grid Integration
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/24/2026 4:51:20 PM
Docketed Date:	3/24/2026

Plug & Charge and Roaming Concepts Workshop

Fuels and Transportation Division – March 25th, 2026 – 10:00 a.m.

Workshop Agenda

- Welcome and Introductory Information
- Plug & Charge and Roaming Background
- Potential Regulatory Concepts
  - Scope
  - Applicability
  - Plug and Charge
  - Roaming
  - Conformance Testing
  - Implementation Timeline
- Questions and Answers
- Next Steps
- Adjourn

Housekeeping

- Workshop is recorded on Zoom
- Virtual Participation via Zoom or telephone during the Q&A period
- To set up a meeting with us, email: Sarah Sweet, at Sarah.Sweet@energy.ca.gov
  Subject: Plug & Charge and Roaming Concepts
- Submit comments to the Vehicle to Grid Docket **22-EVI-06** E-Comment page:
  https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=22-EVI-06
- Comment Deadline: Friday, April 15, 2026, 5:00 PM

Survey

Plug & Charge and Roaming Concepts Workshop

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 URL: https://forms.office.com/g/Yf0s5GCRUA

Plug & Charge and Roaming Background

Why Plug & Charge and Roaming Matter

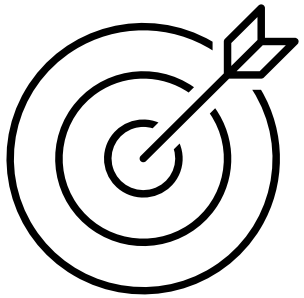
Source: CEC

- Mass adoption of EVs requires a simple charging experience
- Streamlines the charging experience
- 1st Time Charge Success rates with Plug & Charge of >96% (BMW, 2025)
- Interoperability allows for broader implementation of Plug & Charge and Roaming
- Standardization is needed for a baseline implementation

CEC Goals for Plug & Charge and Roaming

1. Improve the EV Driver experience by streamlining charging
2. Standardize the baseline for Plug & Charge and Roaming
3. Support the industry with clear guidance

Today is an exploration of concepts; regulation is one option the CEC may or may not utilize



Plug & Charge in California Today

- DC fast chargers installed or made publicly available on or after July 10, 2023, must have ISO 15118 Plug & Charge capability as per Health and Safety Code 44268.2

- CEC allowed to set minimum requirements for Plug & Charge

Source: CEC

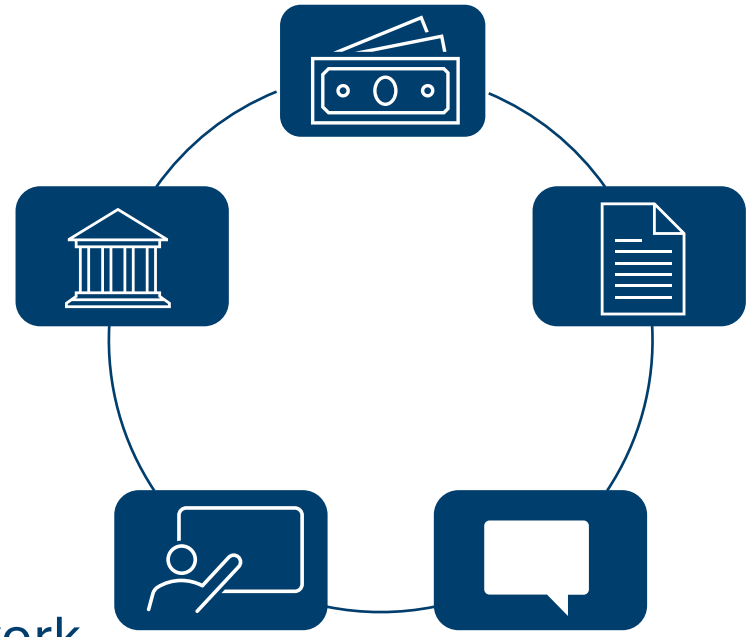
Network Roaming in California Today

- Network roaming significantly simplifies driver access to chargers and supports Plug & Charge
- Health and Safety Code § 44268.2(e) allows the CEC to adopt interoperability billing standards for network roaming payments
- The CEC wants to modernize the current standard with Plug & Charge and interoperability as a key focus

CEC Tools

Funding
- Grant Requirements
- ViGIL
- Charge Yard

Regulation
- Plug & Charge
- Roaming



White Papers and Reports
- Bidirectional Charging
- EV Charging Infrastructure Assessment-AB 2127

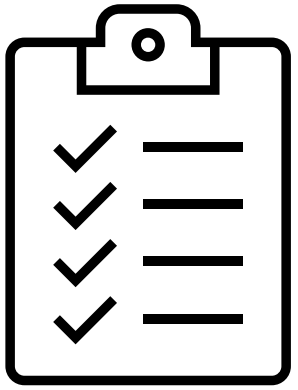
Workshops
- EV Charging Interoperability
- EV Charging Network Roaming Overview

Statements
- Interoperability Statement
- Plug & Charge Statement

Potential Regulatory Concepts

Potential Regulation Goals and Overview

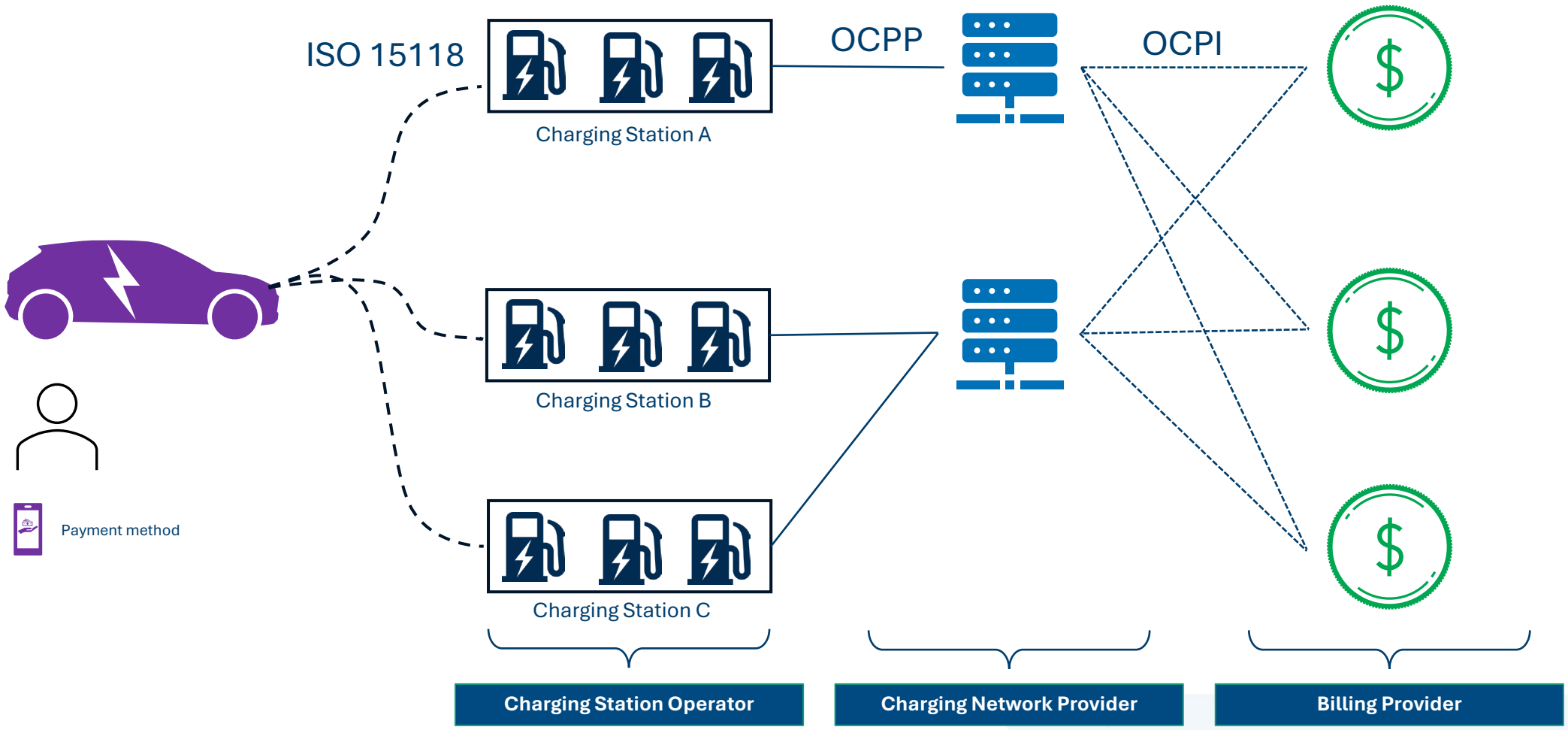
- **Intended Regulation Outcomes:**
  - Plug & Charge Functionality on all Public Charging Stations
  - Plug & Charge Conformance Standards
  - Streamlined Roaming Experience



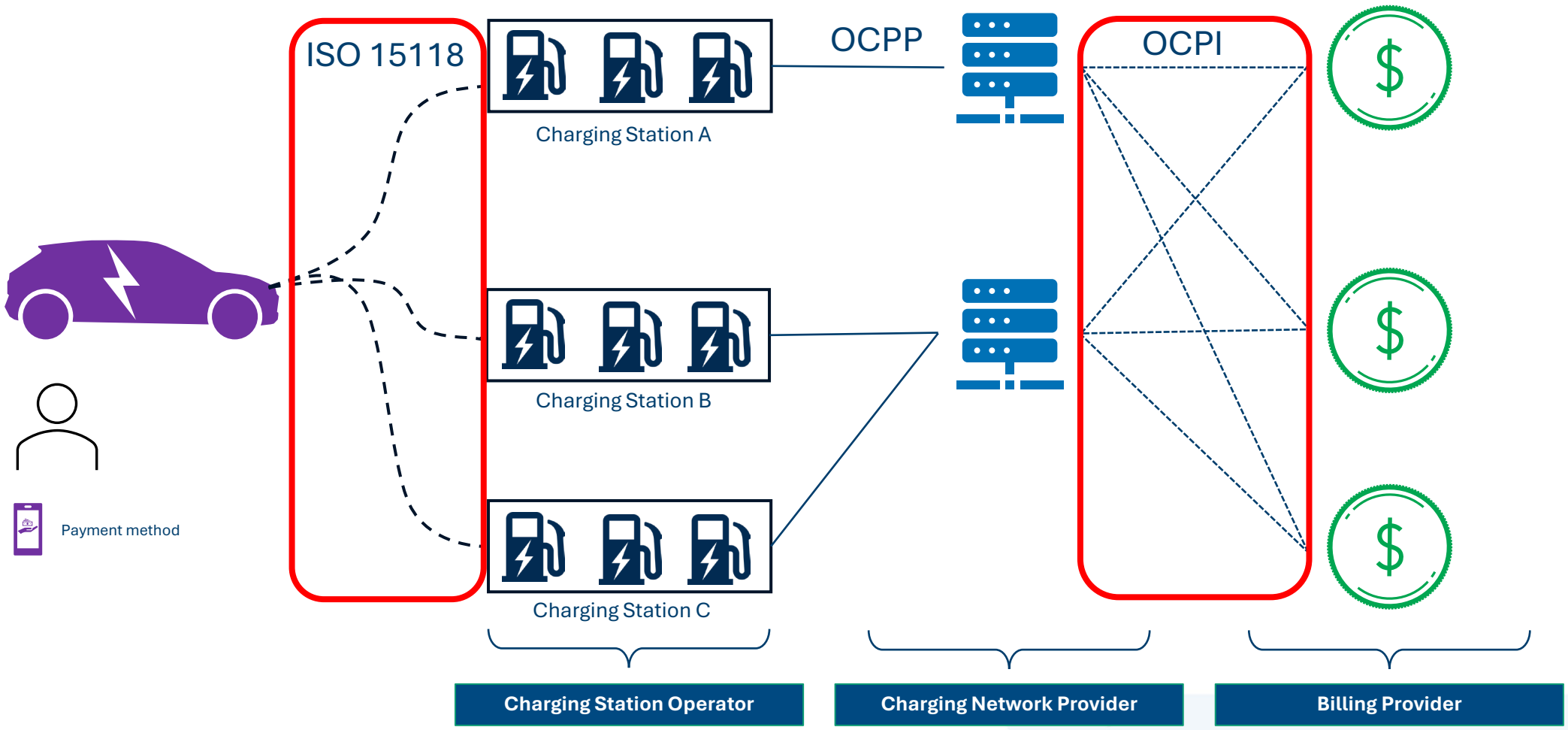
- **Set Minimum Standards:**
  - ISO 15118-2 for Plug & Charge functionality
  - OCPI 2.3 for Roaming

- **Would apply to:**
  - Public DCFC and Level 2 chargers
  - Major Charging Network Providers (CNPs), those operating 100+ Chargers in CA

Scope


ISO 15118
OCPP
OCPI
Charging Station A
Charging Station B
Charging Station C
Payment method
Charging Station Operator
Charging Network Provider
Billing Provider

Scope


ISO 15118
OCPP
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Payment method
Charging Station Operator
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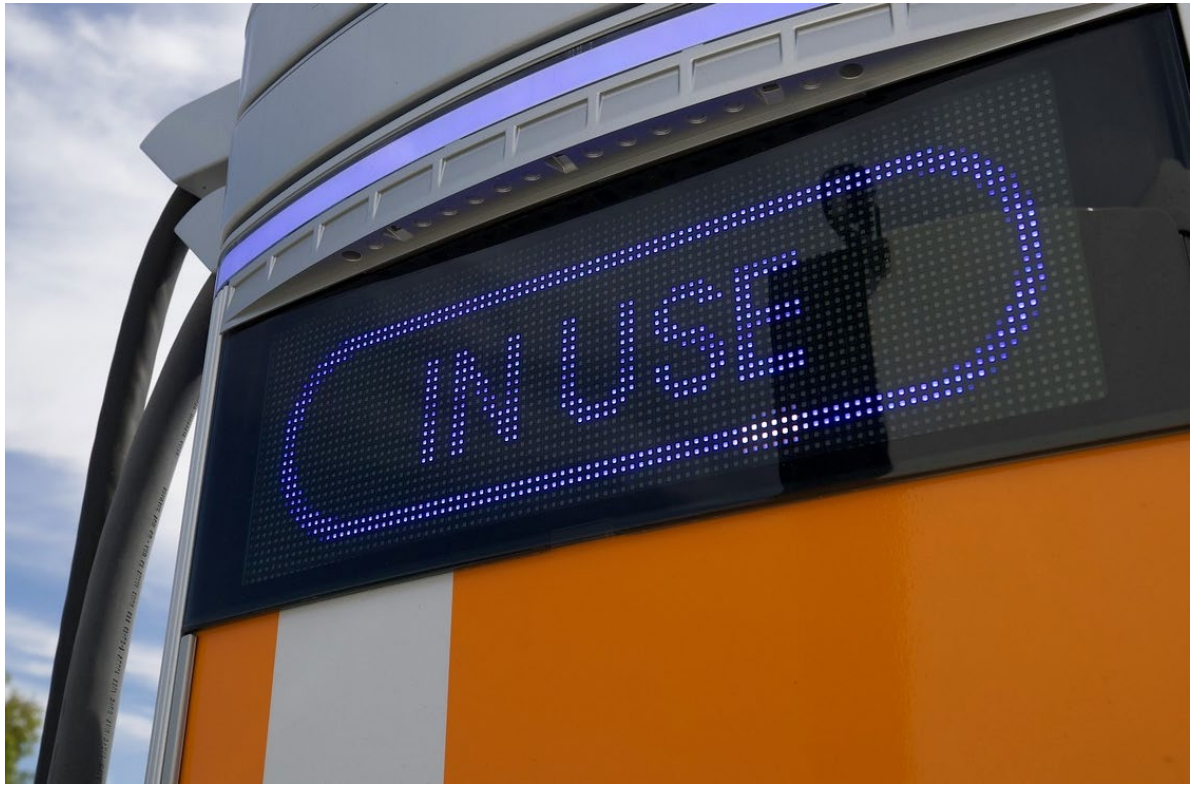
Open Charge Point Protocol (OCPP)

- OCPP is not addressed in this regulation concept
- OCPP is addressed in the Electric Vehicle Charging Data and Reliability standards regulation
- For more information, please see Docket **22-EVI-04** https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-EVI-04



Source: CEC

Potential Applicability

Source: CEC

- Publicly available DCFC and Level 2 charging stations
- Major EV charging network providers, those managing at least 100 publicly available EV charging stations in California

Concept: Plug and Charge Proposed Minimum

Staff proposes a minimum use of ISO 15118-2 to implement Plug & Charge functionality for public DCFC and level 2 chargers

Areas of Feedback:

- Since ISO 15118-2 is already widely adopted and sufficient for Plug and Charge functionality, is ISO 15118-2 appropriate as a minimum?
- Is the industry ready for ISO 15118-20 for Plug and Charge today, or will it be soon?
- Are there cybersecurity, hardware, backward/forward compatibility, or other concerns to consider as part of a proposed minimum?

Concept: Roaming Protocol Proposed Minimum

Staff proposes minimum that major CNPs conform with OCPI 2.3 for network roaming

Areas of Feedback:

- OCPI 2.3 adds support for taxes and vehicle type, and will include a certification program (specification available this year). Is OCPI 2.3 appropriate as a minimum?
- What challenges exist to developing or implementing roaming agreements between providers or networks?

Concept: Conformance Testing

Conformance testing is an evolving landscape that the CEC is monitoring closely for both ISO 15118 and OCPI.

ISO 15118-2:

- Conformance test results would need to be submitted to the CEC to verify the use of ISO 15118-2 using a specified test case list from ISO 15118-4
- Either self-testing or 3rd party could be used
- The CEC is coordinating with CARB to align on test cases used

OCPI 2.3:

- Initially, CNPs would be required to conform to the OCPI 2.3 specifications, confirming compliance with the CEC until a conformance test is available
- Either self-testing or 3rd party testing could be used

Concept: Possible Implementation Timeline*

ISO 15118-2

- Use of ISO 15118-2 Standard:
  - Immediate effect on DCFC first installed or first made publicly available on or after July 10, 2023, per Health and Safety Code § 44268.2(a)(3)(B)
  - Could apply to new AC installations 3 yrs from the effective date of any potential regulation
- Conformance test reporting (self or 3rd party):
  - 12 months after the effective date of any potential regulation for existing DCFC models

OCPI 2.3

- Use of OCPI 2.3 standard and Conformance Testing (self or 3rd party):
  - 12 months after the effective date of any potential regulation

*Pending any potential regulation

Questions and Answers

Questions and Answers

Three ways to ask questions:

Please state your name and affiliation. Keep questions under 3 minutes to allow time for others.

1. **Use the raise hand function in Zoom**
   Zoom Phone Controls:
   - *6 – Toggle mute/unmute
   - *9 – Raise hand
2. **Type questions in the Zoom Q&A Box**
3. **Submit questions after this workshop to:**
   Sarah.Sweet@Energy.ca.gov
   Deadline: **April 15**, 2026, 5:00 p.m. PST

Questions

ISO 15118 and Plug & Charge:

1. Is ISO 15118-2 appropriate as a minimum?
2. Is the industry ready for ISO 15118-20 for Plug and Charge today, or will it be soon?
3. Are there cybersecurity, hardware, backward/forward compatibility, or other concerns to consider as part of a proposed minimum?
4. How does the implementation of Plug & Charge for AC differ from DCFC (if at all)?
5. How should CEC support public key infrastructure (PKI) for Plug and Charge (this may include certificate authorities and certificate trust lists)?
6. What challenges with Plug and Charge implementation merit additional discussion?

Questions

OCPI:

1. Is OCPI 2.3 appropriate as a minimum?
2. What challenges exist with transitioning to OCPI 2.3?
3. What challenges exist to developing or implementing roaming agreements between providers or networks?
4. What challenges with roaming implementation merit additional discussion?

Conformance testing:

1. Beyond ISO 15118 –2 and OCPI 2.3 conformance as a minimum, what other areas should be considered to accelerate availability of interoperable Plug and Charge?
2. What are the recommended minimum set of must-test cases from ISO 15118-4?

Submitting Public Comment

- **The CEC encourages the use of its electronic commenting system**. Visit the e-commenting page for docket number 22-EVI-06 at https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=22-EVI-06
- **Written Comments may be submitted to the Docket Unit at:** docket@energy.ca.gov Include docket number 22-EVI-06 and Plug & Charge and Roaming Concepts in the subject line
- **A paper copy may also be mailed to:**

  California Energy Commission
  Docket Unit, MS-4
  Docket No. 22-EVI-06
  715 P Street
  Sacramento, California 95814

- Deadline to submit Comments: Friday, **April 15**, 2026, 5:00 p.m. PST

Dive Deeper

- **ViGIL:** https://www.dekra.us/en/digital-product-solutions/vehicle-grid-innovation-laboratory-vigil/
- **Charge Yard:** GFO-24-609 - Charging Interoperability and Collaboration Yard (“Charge Yard”)
- **A Roadmap to Unlocking the Benefits of Bidirectional Charging white paper**: https://efiling.energy.ca.gov/GetDocument.aspx?tn=268952&DocumentContentId=106145
- **AB 2127 EV Charging Infrastructure Assessment:** https://www.energy.ca.gov/data-reports/reports/electric-vehicle-charging-infrastructure-assessment-ab-2127
- **Interoperability Statement:** https://efiling.energy.ca.gov/GetDocument.aspx?tn=253106&DocumentContentId=88310

Dive Deeper Continued…

- **Plug & Charge Statement:** https://efiling.energy.ca.gov/GetDocument.aspx?tn=268559&DocumentContentId=105689
- **EV Charging Interoperability workshop:** https://www.energy.ca.gov/event/workshop/2023-12/staff-workshop-electric-vehicle-charging-interoperability
- **EV Charging Network Roaming Overview workshop:** https://www.energy.ca.gov/event/workshop/2024-05/ev-charging-network-roaming-overview-workshop
- **EV Driver Experience webpage**: https://www.energy.ca.gov/programs-and-topics/topics/transportation/improving-electric-vehicle-driver-experience
- **Reliability Regulation Workshop:** https://www.energy.ca.gov/event/workshop/2026-03/workshop-regulations-improved-electric-vehicle-charger-recordkeeping-and

Thank You!

Comments due April 15, 2026, by 5:00 p.m.