

**DOCKETED**

<b>Docket Number:</b>	19-TRAN-02
<b>Project Title:</b>	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
<b>TN #:</b>	246129
<b>Document Title:</b>	Presentation - Electric School Bus Bi-Directional Infrastructure Funding Concept
<b>Description:</b>	N/A
<b>Filer:</b>	Spencer Kelley
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	9/16/2022 9:32:15 AM
<b>Docketed Date:</b>	9/16/2022



# California Energy Commission

Electric School Bus Bi-Directional Infrastructure Funding Concept

Fuels and Transportation Division

September 13, 2022 | 10:00 am



# Workshop Agenda

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<b>10:05 a.m.</b>	<b>Welcome and Introductions</b>
<b>10:15 a.m.</b>	<b>Background and Overview of Available Funding</b>
<b>10:20 a.m.</b>	<b>Funding Concept</b>
<b>10:40 a.m.</b>	<b>Public Comments</b>
<b>11:30 a.m.</b>	<b>Next Steps</b>
<b>11:55 a.m.</b>	<b>Adjourn</b>

\*The workshop end time is an estimate and may end earlier.



# Housekeeping

- Workshop is being recorded
- Workshop Event Webpage:  
<https://www.energy.ca.gov/event/workshop/2022-09/workshop-electric-school-bus-bi-directional-infrastructure-funding-concept>
- Virtual Participation Through ZOOM
  - Raise Hand or use Q&A feature
  - Phone-in participants dial \*9 to raise your hand
- Submit written comments to Docket # 19-TRAN-02 Comment Page:  
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-TRAN-02>

Comment Deadline: Friday, September 30, 2022 by 5:00 pm



# 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 through 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



# Background and Available Funding



# Background

September 6, 2022  
1:58 PM PDT  
Last Updated a day ago

United States

## California power grid threatened by record heat wave as wildfire risk rises





# Electric School Bus Past, Current and Future Funding

## CEC School Bus Replacement Program

- \$75 million, funding 228 bi-directional capable electric school buses

(**Notice of Proposed Awards** can be found at: <https://www.energy.ca.gov/solicitations/2018-05/gfo-17-607-school-bus-replacement-california-public-school-districts-county>.)

## Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)

- \$400 million for School Bus Set-Aside for small and medium air districts

## Proposition 98 General Fund

- \$1.125 billion for electric school buses





# Clean Transportation Program Background

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



California Energy Commission  
**COMMISSION REPORT**

**2021–2023 Investment  
Plan Update for the Clean  
Transportation Program**

December 2021 | CEC-600-2021-03B-CMF





# Overview of Available Funding

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- The fiscal years (FY) 2021 – 2023 Clean Transportation Program Investment Plan allocates approximately \$391 million for MD/HD infrastructure from the Clean Transportation Program and a one-time investment from the California State General Fund.
- This workshop will discuss and receive stakeholder feedback on a solicitation concept that proposes to use \$10 million of these funds.



# Funding Concept





# Funding Concept

- \$10 million for bi-directional infrastructure for electric school buses
- \$2-\$3 million per project
- Anticipating three to five projects funded
- Eligible reimbursable costs include solar generation, stationary battery storage, bi-directional electric school bus charging infrastructure
- Procurement of battery electric school bus is not eligible





# Eligibility Criteria

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## Project Eligibility

- Project site(s) must be located within a Tier 2 or Tier 3 High Fire Threat District
- Infrastructure must be utilized by electric school buses with bi-directional capabilities for either vehicle-to-building or vehicle-to-grid utilization

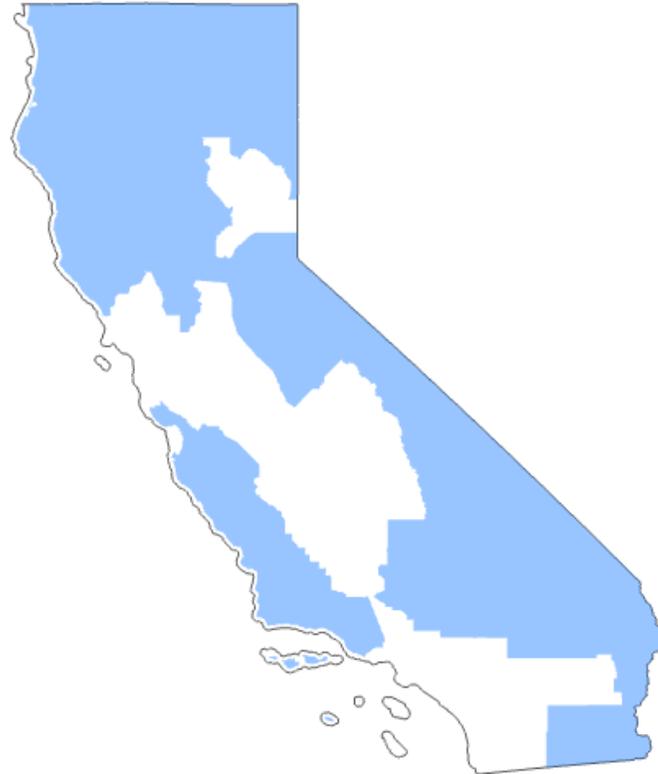


# Eligibility Criteria (Cont.)

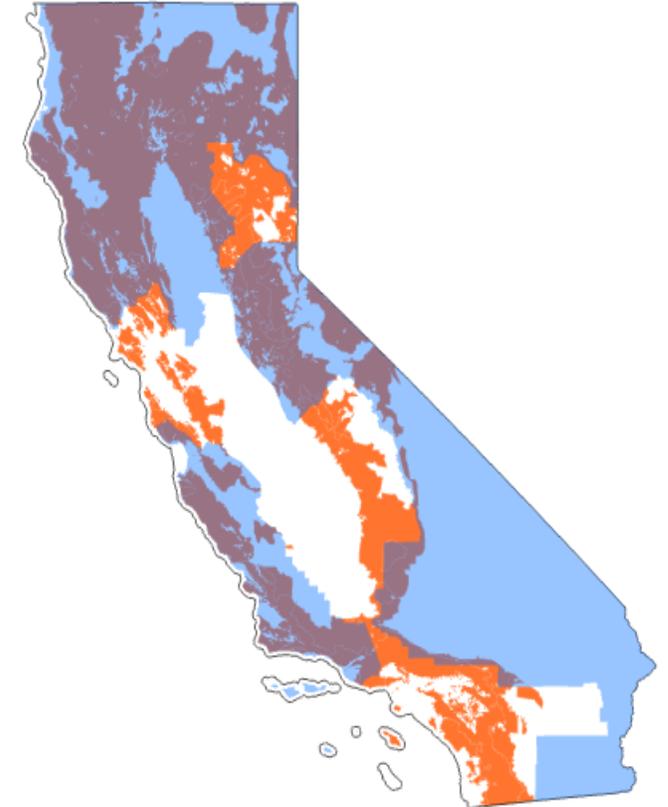
Tier 2 and Tier 3 High Fire Threat District



CAPCOA Map of Small and Medium Air Districts



Tier 2/3 High Fire Threat District with Small and Medium Air Districts





# Eligibility Criteria (Cont.)

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## Project Eligibility

- Local Education Agencies (LEA) own and operate a minimum of 10 bi-directional-capable electric school buses.
- If less than 10 buses, CEC staff is considering setting a minimum amount of kWh storage capacity.
- Demonstrate the capability for participation in grid services in exchange for payment



# Eligibility Criteria (Cont.)

## Charging Equipment Eligibility

- Bi-directional DCFC using CCS-1 connector
- Internally networked (5-year networking agreement)
- Capable of bi-directional charging at a minimum of 60 kW
- Hardware ready for digital communication using ISO 15118-20
- Compliant with Open Charge Point Protocol 1.6 or later
- Certified to UL 1741 Supplement B and any additional interconnection requirements
- Capable of responding to Emergency Load Reduction Program events\*
- May include procurement and installation of renewable generation and other distributed energy resources.

\*Does not apply to installations outside of IOU territory.



# Eligibility Criteria (Cont.)

## Applicant Eligibility

- Project implementers that can install and oversee V2X capable DCFC; incorporating multiple sites within an LEA is encouraged
- Applicants demonstrate an existing relationship with LEA's, electric school bus manufacturers, electric utilities, and experienced EVSE project partners
- Applicant must commit to maintaining and operating equipment for a minimum of five years after project completion
- Minimum match share of 25 percent
- Applicant requirement to produce a case study at the end of project activities



# Example Projects

- Infrastructure installed across multiple LEA sites
- Multiple bi-directional chargers installed at a primary location (e.g., the main bus parking site at a single LEA), in addition to bi-directional chargers installed at additional facilities
- Multiple LEA's in different geographic locations throughout the state taking part in the project, to allow for a variety of scenarios and data to be tested and collected
- Multiple LEA's with varying fleet sizes, demonstrating whether larger fleets are ideal for bi-directional use cases or if the benefits exist, and to what extent, regardless of fleet size

## Example Project Budget

Item	Budget
Bi-directional DCFC	\$1,300,000
Solar and Storage	\$500,000
Electrical Upgrades, Software, Installation, Administration, and Project Management	\$700,000
Match Share (25 percent minimum)	\$625,000
<b>TOTAL PROJECT BUDGET</b>	<b>\$3,125,000</b>



# Questions and Discussion

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- Items for CEC to consider
- Questions for Stakeholders:
  - How do stakeholders suggest equipment ownership be handled and why?
  - Are there any technology requirements stakeholders feel must be accounted for regarding the electric bus or EVSE?
  - What are stakeholders' thoughts on upgrading battery electric school buses to be bi-directional, including hardware and software?
  - Thoughts on 10 bus or battery capacity minimum requirement?
  - General thoughts on the funding concept?
  - If installing infrastructure at multiple sites, is there a feeling of how many should be in a Tier 2/3 Fire Threat District?
  - General thoughts on match share?



# Public Comment and Discussion

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## Zoom Participants

- Use the "hand raise" feature to make comments
- Use the Q&A feature to type questions or comments into ZOOM

## Telephone Participants

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

## Submit Written Comments

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

**Deadline for comments: Friday, September 30, 2022, by 5:00 p.m.**



# Submit Comments to Docket # 19-TRAN-02

## Electronic Commenting System

Visit the comment page for Docket # 19-TRAN-02 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: "19-TRAN-02 Electric School Bus Infrastructure Workshop"

**Deadline for comments: Friday, September 30, 2022, by 5:00 p.m.**



# Find a Partner on EmpowerInnovation.net

Empower Innovation strives to accelerate your clean tech journey with easy access to funding opportunities from the CEC and other funding providers, curated resources and events, and connections to people and organizations.

## **FIND A PARTNER**

Announce your interest in this funding opportunity and message other interested parties to find potential partners.

## **RESOURCES & TOOLS**

Browse the collection of resources for clean tech innovators including Resource Libraries, Funding Sources, Tools, and Databases.

To search for funding opportunities, please go to this link:

<https://www.empowerinnovation.net/en/custom/funding/directory>

Please direct questions for the Empower Innovation platform to:

[https://www.empowerinnovation.net/en/contact\\_us](https://www.empowerinnovation.net/en/contact_us)



# Next Steps

ACTIVITY	DATE
<b>Workshop Comment Period Ends</b>	<b>September 30, 2022, 5:00 p.m.</b>
Solicitation Release	January 2023*
Deadline to Submit Applications	March 2023*

\*Projected date. Is subject to change.

To sign up for CEC subscriptions, visit: <https://www.energy.ca.gov/subscriptions>

- Solicitation Relevant Topics Include:
  - Commission General Topics: "RFP's, Solicitations"
  - Transportation topics: "School Bus Replacement Program, Clean Transportation Program, Distributed Generation, California Vehicle-Grid Integration Roadmap Update"



**Thank You!**

