

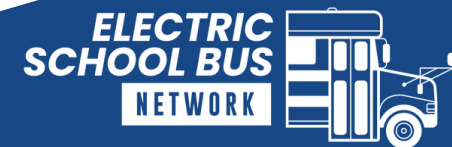
**ELECTRIC**  
**SCHOOL BUS**  
NETWORK



**Funding Updates &  
Infrastructure Planning**

**Electric School Bus Network California Forum**

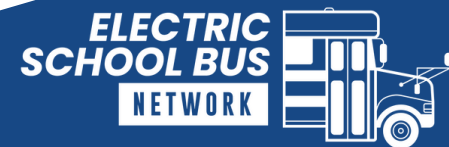
October 4, 2023 | 11:00 a.m. PT



# Forum Agenda

**October 4, 2023**

- Introductions
- Electric School Bus Network Forum
- About EPA Clean School Bus Program and Resources
- HVIP Public School Bus Set - Aside
- Zero-Emission School Bus Tips and Resources
- EnerglIZE Commercial Vehicles



# Meet the Team



**Rachel Chard**  
National Program Manager



**Michelle Hanson**  
Program Manager



**Ian Fried**  
Lead Project Manager



**Juan Espinoza**  
Project Manager



**Chrystal Ales**  
Project Manager



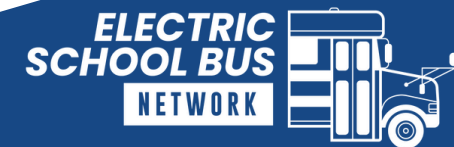
**Emily Gasca**  
Project Manager



**Liza Walsh**  
Associate Project Manager



**Katelyn Tomaszewski**  
Project Manager

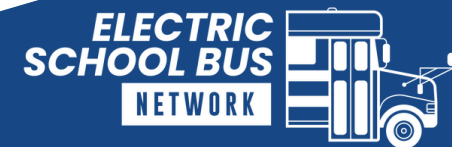




# Electric School Bus Network

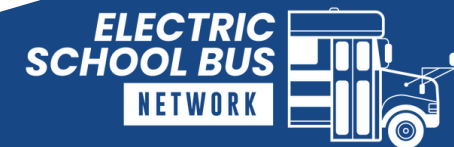
The Electric School Bus Network **accelerates nationwide school bus fleet electrification through peer-to-peer networking and dialogue-driven forum meetings** for school districts, advocacy and government organizations, and industry representatives. The ESB Network provides access to educational tools, resources, and subject matter experts to **help support the electric school bus fleet transition.**

In Partnership with:



# Electric School Bus Network Forum Meetings

- Previously called “working groups” - **now called forums!**
- Forum meetings are not webinars - they are ongoing discussions where participation is encouraged
- **Goal: Ease the transition to electrify school bus fleets nationwide**
  - Facilitate conversations
  - Provide up-to-date information
  - Independent/Third Party Partner





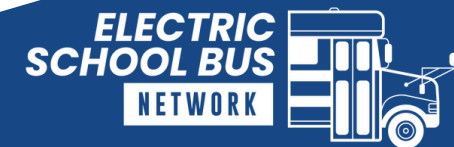
# EPA 2023 Clean School Bus Program

- Currently open and accepting applications
- Apply by **January 31, 2024, by 4:00pm Eastern Time (1:00pm Pacific Time)**
- Eligible Applicants: Public School Districts, Indian Tribes, Tribal Organizations, or Tribally Controlled Schools, and Non-profits
- Prioritization Criteria:
  - High need school districts and low-income areas
  - Rural school districts (identified with locale code "43-Rural: Remote")
  - Bureau of Indian Affairs-funded school districts
  - School districts that receive basic support payments for children who reside on Indian Land

## Maximum Funding Amounts

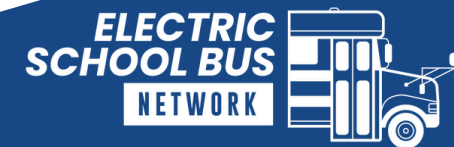
School District Prioritization Status	Replacement Bus Fuel Type and Size					
	ZE – Class 7+	ZE – Class 3-6	CNG – Class 7+	CNG – Class 3-6	Propane – Class 7+	Propane – Class 3-6
Buses serving school districts that meet one or more prioritization criteria	Up to \$345,000 (Bus + Charging Infrastructure)	Up to \$265,000 (Bus + Charging Infrastructure)	Up to \$45,000	Up to \$30,000	Up to \$35,000	Up to \$30,000
Buses serving school districts that are not prioritized	Up to \$200,000 (Bus + Charging Infrastructure)	Up to \$145,000 (Bus + Charging Infrastructure)	Up to \$30,000	Up to \$20,000	Up to \$25,000	Up to \$20,000

Source: 2023 Clean School Bus Rebates Program Guide



# EPA 2023 Clean School Bus Program Resources

- [Program Guide](#)
- [Online Application](#)
- [Application Guide](#)
- For more information, please reach out to [cleanschoolbus@epa.gov](mailto:cleanschoolbus@epa.gov)
- For Clean School Bus Program technical assistance, please reach out to [cleanschoolbusTA@nrel.gov](mailto:cleanschoolbusTA@nrel.gov)



October 2023



★ CALIFORNIA  
HVIP

Public School Bus Set-Aside





# Public School Bus Set-Aside Updates

- The HVIP Public School Bus Set-Aside and EnergIZE Joint Application applicant **priority** window opened on June 20<sup>th</sup>, 2023, at 10:00am PT and closed on September 29, 2023, at 5:00pm PT.
- **Limited funding still available!**
- **Application remains open on a first-come, first-served basis.**
- **Potential participants are encouraged to apply immediately.**

Higher voucher  
amounts

Prioritizes rural  
and underserved  
communities

Requires  
scrappage of an  
old  
school bus



# Public School Bus Set-Aside & EnerglIZE Joint Application

- › Pairs electric school bus vehicle incentives with charging infrastructure incentives
- › PSB-SA Eligible Applicants: Public School Districts, Public Charter Schools, Joint Power Authorities, County Offices of Education and the Division of State Special Schools located in a **Small or Medium** air District. All applicants must serve K-12<sup>th</sup> grade levels.
- › Participation in the Public School Bus Set-Aside requires the scrappage of an old school bus. The old school bus can be any internal combustion engine using any fuel type.
- › PSB-SA Voucher Amounts: Public School Bus Set-Aside intends to cover nearly, if not all, (the full cost) of a new zero-emission school bus.

## Eligible Air Districts

<b>Small Air District</b>  <b>(Eligible)</b>	Amador County APCD Antelope Valley AQMD Butte County AQMD Calaveras County APCD Colusa County APCD El Dorado County AQMD Feather River AQMD	Glenn County APCD Great Basin Unified APCD Imperial County APCD Lake County AQMD Lassen County APCD Mariposa County APCD Mendocino County AQMD	Modoc County APCD North Coast Unified AQMD Northern Sierra AQMD Northern Sonoma APCD Shasta County AQMD Siskiyou County AQMD Tehama County APCD Tuolumne County APCD
	<b>Medium Air District</b>  <b>(Eligible)</b>	Eastern Kern APCD Mojave Desert AQMD Monterey Bay Unified APCD Placer County APCD	San Luis Obispo County APCD Santa Barbara County APCD Ventura County APCD Yolo-Solano AQMD

## Maximum Voucher Amounts

School Bus Type	Without a wheelchair lift	With a wheelchair lift
Type A	\$285,000	\$310,000
Type C	\$350,000	\$375,000
Type D	\$370,000	\$395,000

# Public School Bus Set-Aside and EnergIZE Joint Application Resources

- HVIP Public School Bus Set-Aside website [californiahvip.org/purchasers/#schoolbus](https://californiahvip.org/purchasers/#schoolbus)
  - Online [Joint Application](#) (includes preliminary infrastructure questions)
  - Joint [Application Guidance](#)
  - [Letter of Intent](#) Template

# Zero-Emission School Bus Types and Ranges

## Operational Range:

- Zero-emission school buses have a variety of operational ranges available. Operation range falls between 100-150 miles.
- The operational range varies based on the battery pack size/capacity and how it may be impacted by factors which include but are not limited to weather, driving behavior of the operator, utilization of heating and cooling, etc.



### Type A:

Is a small conversion bus using a cutaway front section with a left side vehicle driver's door.

### Type C:

Is a large bus with the entrance door behind the front wheels. It is also known as a conventional style school bus.

### Type D:

Is a large bus with the entrance door located ahead of the front wheels and is also known as rear engine or front engine transit style school bus.

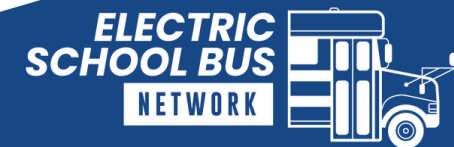
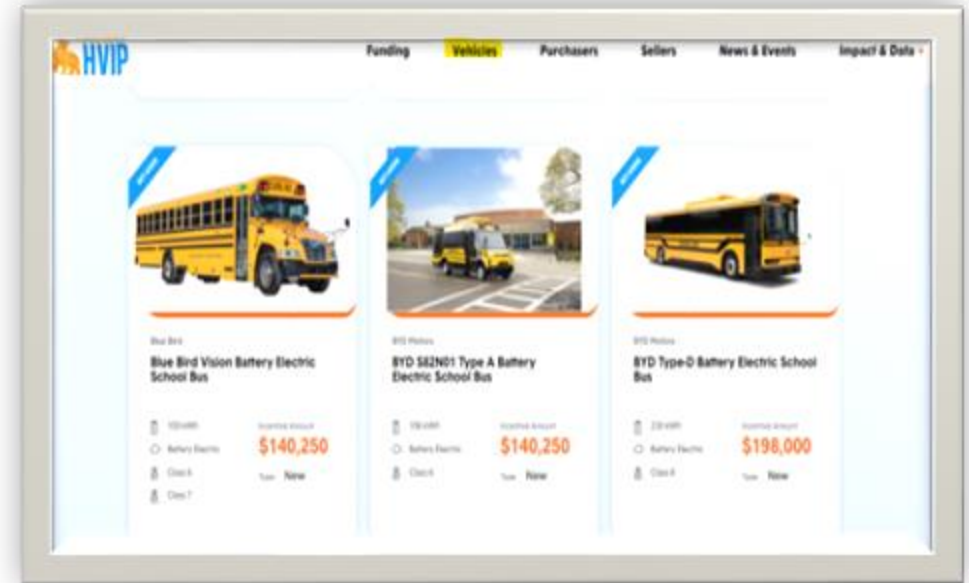
# Zero-Emission School Bus and Charging Equipment Selection

## Reasoning behind selecting the Charging Equipment after the Zero-Emission School Bus is selected:

- To ensure the power level of the charging equipment selected is sufficient to support the vehicle battery and operational needs.
- To ensure the charging equipment is compatible with the vehicle inlet.

**Note:** Ask your dealer if they have recommended charging equipment that works best with your selected ESB and for your operational needs.

Visit California HVIP school bus catalog here: [School Bus - Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project | California HVIP](#)



# Zero-Emission School Bus Selection Resources

## [The EPA Clean School Bus Program Bus Inventory Sheet](#)

A tool that school districts can use to help collect the relevant information required when selecting an electric school bus.

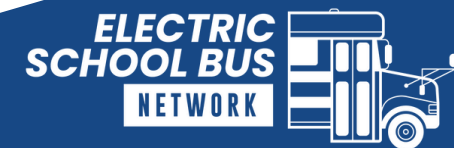
## [World Resource Institute's Electric School Bus Buyer's Guide](#)

A comprehensive guide that offers school districts and others an overview of the electric school bus market and a catalog ("Buyer's Guide") that presents electric school bus models available today with detailed vehicle specifications.

## [CALSTART's Zero Emission Technology Inventory \(ZETI\) Tool](#)

An interactive online resource to provide comprehensive information including regions where zero-emission brands are available for purchase, and the timeline over which additional models are expected to become available.

The U.S. Department of Energy's Alternative Fuels Data Center's [database of state and federal funding programs](#) is a resource that can help school districts identify various funding options available.





# Zero-Emission School Bus Training Opportunities

## **California Energy Commission's ESB Technician Training Series and High Voltage Safety Course:**

Free Training for Technicians and School Districts.

## **CALSTART's Electric School Bus Network:**

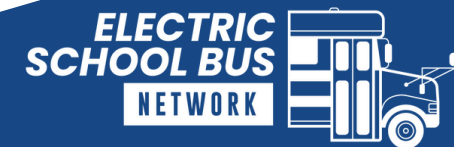
Allows for participating in working group meetings and to network with peers Nationwide.

## **Sunline Transit Agency's Center of Excellence:**

Comprehensive tools and resources, addressing all aspects of in-service management for Zero-Emission Bus.

## **Alternative Fuels Data Center Driver and Technician:**

This video module and associated handout discusses the four basic levels of training for school bus drivers and technicians.

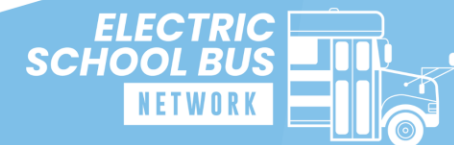


Learn more at:

[Californiahvip.org/purchasers/#schoolbus](https://californiahvip.org/purchasers/#schoolbus)

Need Assistance?

SchoolBusTeam@CALSTART.org





**Energize**  
COMMERCIAL VEHICLES

---



# Overview

# EnergIZE Commercial Vehicles

Energy Infrastructure Incentives for Zero-Emission Commercial Vehicles  
*Accelerating fueling infrastructure deployment for zero-emission trucks, buses and equipment*

Jamaica Gentry  
*California  
Energy Commission  
(CEC) Commissioning  
Agreement Manager  
(CAM)*

Diana Friedrich  
*CEC CAM*

Alyssa Haerle  
*Director of Infrastructure  
Incentive Administration*

Ralph Troute  
*Deputy Director*

Tesi Bravo  
*Deputy Director*

Amanda Le  
*Lead Project Manager*

Alberto Santos-  
Davidson  
*Project Manager*

Ian Cadger  
*Project Manager*

Kelly Ratchinsky  
*Project Manager*

Olaoluwa Oyewusi  
*Project Manager*

Aidan Anthony  
*Associate Project  
Manager*

Eric Canales-  
Ramirez  
*Research Assistant  
Intern*

Eddy Huang  
*Director*

Tom Rauls  
*Technical Advisor*

Wen-Han Liu  
*Project Manager*

Priscilla Barragan  
*Project Manager*

Jalyn Collins  
*Environmental Scientist*

Saul Loza  
*Environmental Scientist*

Thanh Nguyen  
*Environmental Scientist*

Grecia Maya  
*Environmental Scientist*



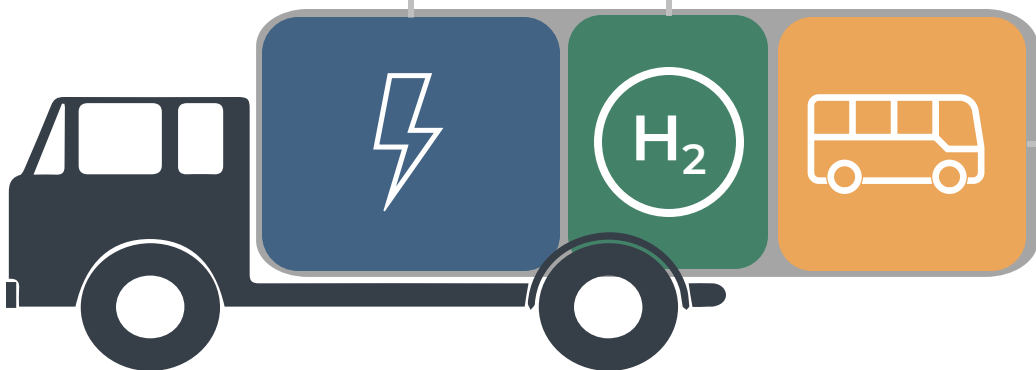
# Overview of EnerglIZE

## Energy Infrastructure Incentives for Zero-Emission Commercial Vehicles

Provides \$183M in financial incentives to increase the deployment of commercial zero emission medium- and heavy-duty (MD/HD) vehicle infrastructure.

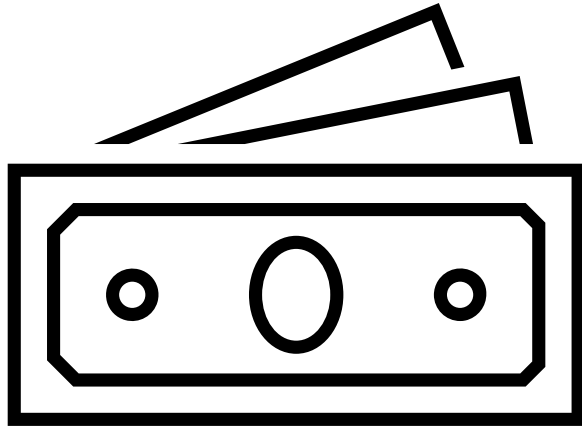
Prioritizes equity and community involvement while making incentives available to a wide audience by offering assistance and support.

Funded by the California Energy Commission's (CEC) Clean Transportation Program.





# Public School Bus Set-Aside Updates (Infrastructure)



- Funding has been set aside for school bus infrastructure through EnergIIZE.
- Applicants must first submit HVIP (Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project) Public School Bus Set-Aside and EnergIIZE Joint Application **Part A**.
- Joint Application **Part B** (infrastructure) tentatively opening November 2023.

# Infrastructure Checklist

## *Public School Bus Set-Aside Joint Application Part B*

- Confirmation you have reached out to your utility. Examples include:
  - Copy of request for new service from the local utility (e.g., email correspondence with the utility) containing the ticketed request for new service,
  - Proof of communications with your utility asking for new service, or
  - Proof of participation in available utility programs for make-ready funding (e.g., Customer Agreement Form signed by the site operator).
- Confirmation the project does not have an active California Energy Commission grant.
- School contact information.
- Tax ID number.
- Site information for intended EV charging infrastructure (site address, number of sites).
- Confirmation of whether or not participant owns the site.
- Name of electricity provider.
- Utility customer number for site of intended infrastructure.
- Confirmation of whether or not participating in utility provider's make-ready program (if applicable).

# Infrastructure Incentive Structure

## *For Public School Bus Set-Aside*

Project Cap: Up to \$275,000

Eligible cost examples include but not limited to: EV charging equipment, equipment product warranty, labor costs related to construction paid at prevailing wage.

# Standard EnerglIZE Updates



## EV Fast Track

Applicants in this funding lane are ready to go and may already have prior experience applying for commercial MD/HD EV funding.

Open Q1 2024\*



## Hydrogen

Applicants in this funding lane intend to develop a hydrogen infrastructure project for commercial MD/HD vehicles.

Open Q2 2024\*



## EV Jump Start

Applicants in this funding lane will need to meet specific eligibility criteria and will be allotted more time to submit required documents.

Ex.:

Tribal, Nonprofit, Schools,  
DAC/ LIC.

Open Q3 2024\*



## EV Public Charging Station

Applicants in this funding lane intend to develop publicly available charging stations for commercial MD/HD EVs.

Open Oct. 19, 2023 – Nov. 3, 2023



# Infrastructure Planning

# Reaching Out to Your Utility

- Start early
- Before reaching out to utility, select the EV charger(s) best suited for your site:
  - Alternating Current (AC) charger
  - Direct-Current (DC) charger
  - Vehicle-to-Grid (V2G) charger
  - [EnerGIZE Approved Product List](#)
- Your utility will need to know the following:
  - Project demand
  - Service size and voltage (if possible)



Station Electrical Output	
Max Output Power	62.5 kW
Output Voltage, Charging	200-1000V DC
Max Output Current	156A
Max Modules per Station	2

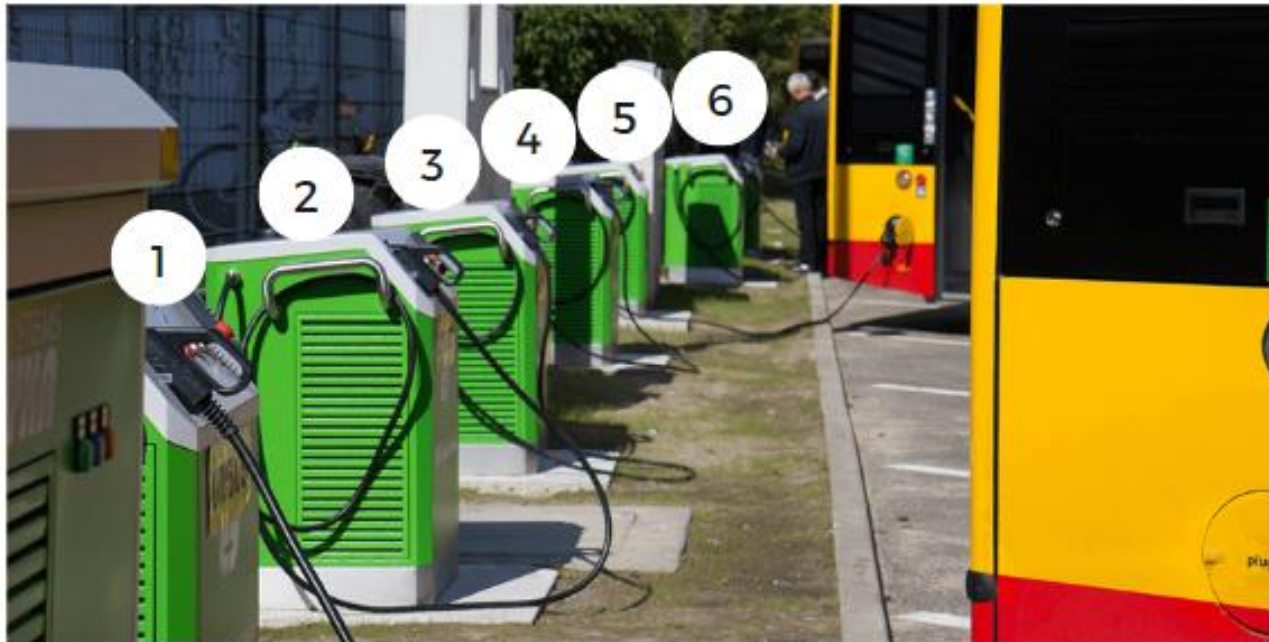


# Reaching Out to Your Utility (Continued)

Utility will need to know the project demand:

Project Demand = Charger size x # of Chargers

50kW Charger



Project Demand:  
50kW Charger x 6 chargers =  
300kW

# Utility Make-Ready Programs

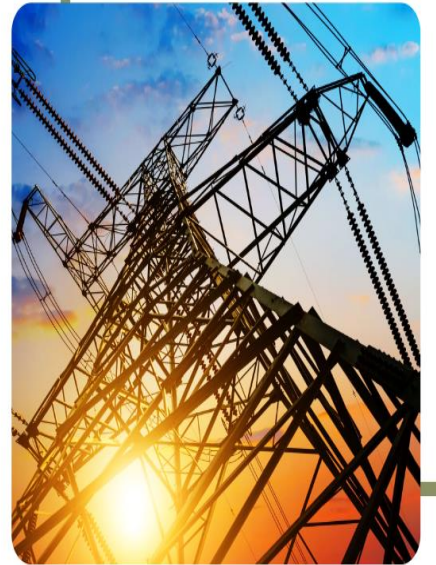
- Some utilities offer Make-Ready programs which provide infrastructure installation support for equipment.
- Make-Ready resources:
  - Make-Ready panel [recording](#)
  - Make-Ready panel [slide deck](#)
  - <https://energiize.org/infrastructure>

## Make-Ready Program

Need installation support for electrical system upgrades, switchgear, meters, wiring, conduit, and more? See if your project site is eligible to participate in a Make-Ready program sponsored by your utility and ensure your site has adequate capacity to operate your commercial MD/HD ZEV infrastructure. Equipment eligible for incentives through the EnergiIZE Commercial Vehicles Project extends from the customer side of the meter to the plug or nozzle of a MD/HD ZEV. Note that EnergiIZE provides incentives toward make-ready infrastructure only in areas where this service is not currently provided by the utility.

AVAILABLE MAKE-READY PROGRAMS

UTILITY LOOKUP



# Work With an EnergiIZE Project Partner



## Installation Partner

- ✓ An individual or organization who aids in the completion of a ZEV infrastructure site.
- ✓ May NOT apply on behalf of the fleet for whom they are providing infrastructure installation services.
- ✓ Work with an Installation Partner (formerly known as Preferred Vendor) vetted by EnergiIZE team ([www.energiize.org/partner](http://www.energiize.org/partner)).



## Application Partner

- ✓ An individual or organization who aids in the completion of a ZEV infrastructure site.
- ✓ MAY apply on behalf of the fleet for whom they are providing infrastructure installation services.
- ✓ **Application form for vetted Public School Bus Infrastructure Application Partner now available.** Apply at <https://forms.office.com/r/kqpU4Uk9sB>.

# Existing EnergiIZE Project Partner List



## Find a Project Partner

Select a Project Partner type below to download a PDF list of Application or Installation Partners.

APPLICATION PARTNERS

INSTALLATION PARTNERS

<https://energiize.org/partners>

# EnergIIZE Application Partner Form



## EnergIIZE Project Partner Application

*The terms Vendor, Approved Vendor, and Preferred Vendor have been updated to EnergIIZE Project Partners, Application Partners, and Installation Partners. The roles remain the same.*

EnergIIZE maintains a list of partners who can assist in the completion of a ZEV infrastructure incentive application and construction project. EnergIIZE Project Partners fall under two categories: Application Partners and Installation Partners. Application Partners are intended to fulfill more of a project management and advisory role. Installation Partners fulfill more of a contractor's role and perform the physical construction and installation. It is possible for an EnergIIZE Project Partner to be both an Application Partner and an Installation Partner.

1. Application Partner:

<https://forms.office.com/r/kqpU4Uk9sB>





# Infrastructure Resources

# Infrastructure Readiness Center (IRC)



## Planning for Success

The Infrastructure Readiness Center (IRC) provides you with tools and resources to assist you with your zero-emission vehicle and infrastructure deployment needs. Explore the tools below to help you with infrastructure planning, identifying funding resources, and evaluating the total cost of ownership of your vehicle fleet.

Four tool cards are displayed in a 2x2 grid. Each card has a title, a brief description, and a right-pointing arrow. The cards are: 1. Infrastructure Insite: "Infrastructure INSITE provides guidance on your infrastructure planning needs for electric charging and hydrogen refueling infrastructure." 2. Funding Finder: "The Funding Finder provides helpful information on available funding incentives for commercial vehicles and infrastructure in California. Take a look at the funding sources that may be available to support you with your project needs." 3. Total Cost of Ownership: "The Total Cost of Ownership (TCO) tool will enhance your understanding of the total cost of ownership by comparing an internal combustion engine (ICE) fleet to zero-emission vehicle technologies." 4. The Low Carbon Fuel Standard Fleet Estimator: "The Low Carbon Fuel Standard (LCFS) Fleet Estimator provides insight into the total financial value and carbon reduction attributable to LCFS credit generation from the operation of zero-emission equipment. It is most effective when used with other TCO tools." Each card has a circular icon representing the tool's function.

## Resources

Infrastructure INSITE, Funding Finder, Total Cost of Ownership Calculator

## Tools

Planning guides and checklists, infrastructure planning FAQs, Site Plan Template, success stories and best practices

## Updates

Recordings of past webinars and events, and coming soon: Energize updates and testimonies on project participation

## Application Documents

Application forms and Implementation Manual

Visit [www.energize.org/resources](http://www.energize.org/resources)

# Resources

**English**

**Español**

## **Electric**

- ⬇ Infrastructure Planning Guide - Trucks
- ⬇ Infrastructure Planning Guide - School Bus
- ⬇ Infrastructure Planning Guide - Transit
- ⬇ GoBIZ EV Charging Guidebook
- ⬇ Intro to LCFS Participation
- ⬇ Intro to LCFS Credits
- ⬇ LCFS Credits Overview
- ⬇ Site Plan Checklist for EV
- ⬇ Permitting - EV
- ⬇ School Bus - Connectors

<https://energiize.org/resources>



# Additional Resources

- [EnerglIZE Implementation Manual](#) (Updated Q4 2023)
- [Public School Bus Y2 Implementation Manual Addendum](#) (Updated Q3 2023)
- [Subscribe](#) to EnerglIZE updates



# Contact Us

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877-ENR-GIZE  
877-367-4493



[infrastructure@CALSTART.org](mailto:infrastructure@CALSTART.org)



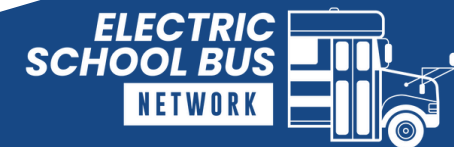
[www.Energiize.org](http://www.Energiize.org)



48 S Chester Ave  
Pasadena, CA 91106

# Technical Assistance Office Hours

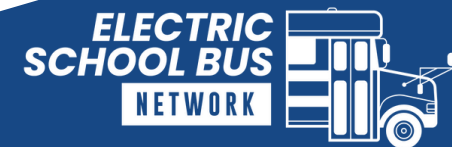
- Office hours coming in November
  - 1:00pm on Wednesday November 1, 8, and 15
- Office Hours Format
  - One hour long
  - Questions will be taken at the meeting and answered
  - If questions cannot be answered staff will follow up
  - Questions relevant to a greater audience will be recorded and shared
- Receive hands on technical assistance on your zero-emission school bus transition
- Office hours to be hosted online through Zoom



**ELECTRIC**  
**SCHOOL BUS**  
NETWORK



**Questions?**



# Thank you for participating!

- Follow-Up Email
  - Recording of the meeting
  - Copy of slides
  - Zoom link to Technical Assistance Office Hours
- Next CA Forum Meeting: December 6, from 11:00 a.m.–12:00 p.m. PT
  - **Note:** You are already registered! Save the date on your calendar.
- Questions? Email [SchoolBusTeam@calstart.org](mailto:SchoolBusTeam@calstart.org)

