



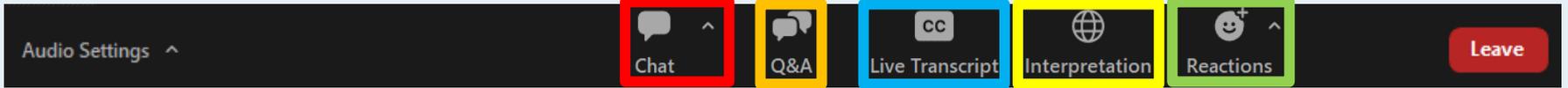
EPA CLEAN SCHOOL BUS

Technical Assistance Overview & Utility Planning w/ Joint Office of Energy and Transportation

June 8, 2023 @ 1 PM ET

Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Zoom Webinar Logistics



- **This presentation is being recorded.** The slides and recording will be posted to epa.gov/cleanschoolbus as soon as they are processed for posting.
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Logística de seminarios web en Zoom



- **Esta presentación es grabada.** Las diapositivas y la grabación se publicarán en epa.gov/cleanschoolbus tan pronto sean procesadas para su publicación.
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- **Chat** Se encuentra inhabilitado el chat, pero los presentadores podrían compartir enlaces a través de la función de chat.
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Live transcript is available

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Live Transcript

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Interpretation

Agenda

Overview of the Clean School Bus (CSB) Program

2023 CSB Grant Program Overview

Utility Engagement Pledge w/ BEL, EEI, & NRECA

Technical Assistance Overview & Preparing to Work
with Your Utility w/ Joint Office of Energy and
Transportation

Question & Answer Session

Next Steps and Resources

Overview of the Clean School Bus Program

Under **Title XI: Clean School Buses and Ferries**, the Bipartisan Infrastructure Law (BIL) provides **\$5 billion** over five years (FY22-26) for the replacement of existing school buses with zero-emission and clean school buses.

These new clean school bus replacements will produce either **zero or low tailpipe emissions** compared to their older diesel predecessors.

School bus upgrades funded under this program will result in **cleaner air on the bus, in bus loading areas, and in the communities in which they operate.**

The first funding opportunity was the **2022 Clean School Bus Rebate Program**. The second funding opportunity is the **2023 Clean School Bus Grant Program Notice of Funding Opportunity (NOFO)**, which opened on April 24, 2023, and will close on **August 22, 2023**.



2023 CSB Grant Program Overview



EPA anticipates awarding approximately **\$400 million** in CSB funding under this FY23 Notice of Funding Opportunity (NOFO).

This NOFO **includes two sub-programs**, one for school district and Tribal applicants (**School District Sub-Program: 15-50 buses**) and one for third-party applicants benefitting at least four school districts (**Third-Party Sub-Program: 25-100 buses**).

Eligible activities include the replacement of existing internal-combustion engine (ICE) school buses with **electric, propane, or compressed natural gas (CNG) school buses**, as well as the purchase and installation of **electric vehicle supply equipment (EVSE) infrastructure**.

EPA is prioritizing applications that will replace buses serving **high-need local education agencies, Tribal school districts funded by the Bureau of Indian Affairs or those receiving basic support payments for students living on Tribal land, and rural areas**. EPA is committed to ensuring the CSB Program delivers on the **Justice40 Initiative to ensure that at least 40% of the benefits of certain federal investments flow to disadvantaged communities**.



Application packages must be submitted to EPA via [Grants.gov](https://www.grants.gov) no later than 8/22/23 at 11:59 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.



**EPA CLEAN
SCHOOL BUS**

CSB Funding per Replacement Bus

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 \$395,000 (Bus + Charging Infrastructure)	Up to \$315,000 (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 \$250,000 (Bus + Charging Infrastructure)	Up to \$195,000 (Bus + Charging Infrastructure)	Up to \$30,000	Up to \$20,000	Up to \$25,000	Up to \$20,000

Vehicle and Infrastructure Costs: Eligible project costs include the purchase price of eligible vehicles as shown on this slide and electric vehicle supply equipment (EVSE) infrastructure for new electric buses

Project Implementation Costs: Eligible additional project costs also include those costs directly related to the implementation, management, and oversight of the project. Please refer to the NOFO for additional specific information.

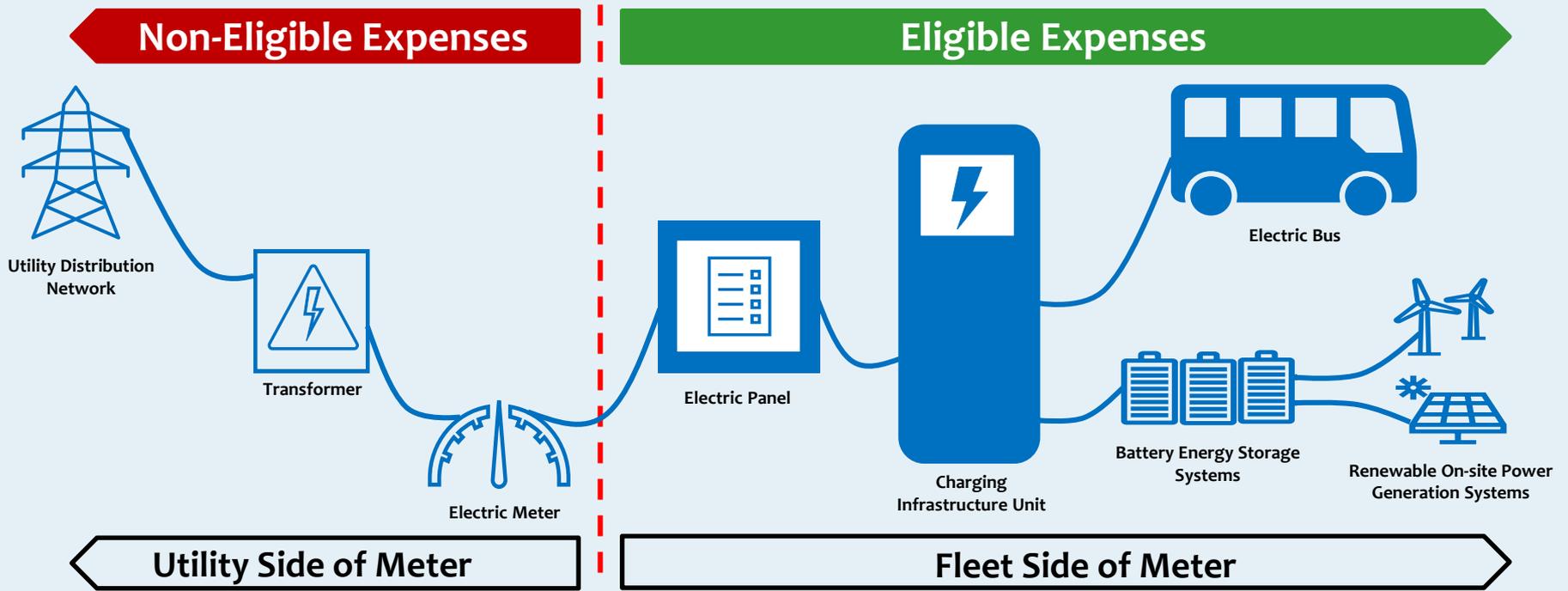
*Funding levels include combined bus and EV charging infrastructure. Recipients have flexibility to determine the split between funding for the bus itself and the supporting infrastructure.



Application packages must be submitted to EPA via [Grants.gov](https://www.grants.gov) no later than 8/22/23 at 11:59 p.m. ET. For more information, please visit www.epa.gov/cleanschoolbus.



EPA CLEAN SCHOOL BUS



- EPA funding for infrastructure is **limited to the fleet's side of the meter**. May include installation, upgrades (including software and telematic equipment) and permits. Funds may also be used for battery energy storage systems (BESS) associated with new electric school buses, and renewable on-site power generation systems to power the buses and equipment, if on the fleet side of the meter.
- **All Level 2 charging infrastructure purchased under this program must be EPA ENERGY STAR certified chargers.** EPA recommends that all other charging infrastructure (e.g. DC Fast-Charge) purchased under this program be listed by a Nationally Recognized Testing Laboratory (NRTL).

Utility Engagement Pledge



A primary barrier school districts are facing is uncertainty around charging infrastructure deployment and how to engage with electric companies

- **Installation of charging infrastructure can undergo long lead times and requires close coordination with the local utility**



EPA is working with national electric utility company organizations to support school districts through a Utility Pledge that includes:

- **Facilitating Communication Between Electric Providers and School Districts**
- **Providing Technical Support and Assistance**
- **Increasing Funding and Deployment**



Additional information on the Utility Pledge and other technical assistance resources are available on: [epa.gov/cleanschoolbus-technical-assistance](https://www.epa.gov/cleanschoolbus-technical-assistance)



Joint Office of
**Energy and
Transportation**

Technical Assistance Overview & Preparing to Work with Your Utility

Clean School Bus Program Webinar
June 8, 2023

driveelectric.gov

Agenda

- Introductions
- Technical Assistance Overview
- Preparing to Work with Your Utility
 - ESB Planning Form
 - Charger Overview
- Utility interconnection
 - Utility infrastructure
 - Utility rates and solutions



Electric School Bus Technical Assistance

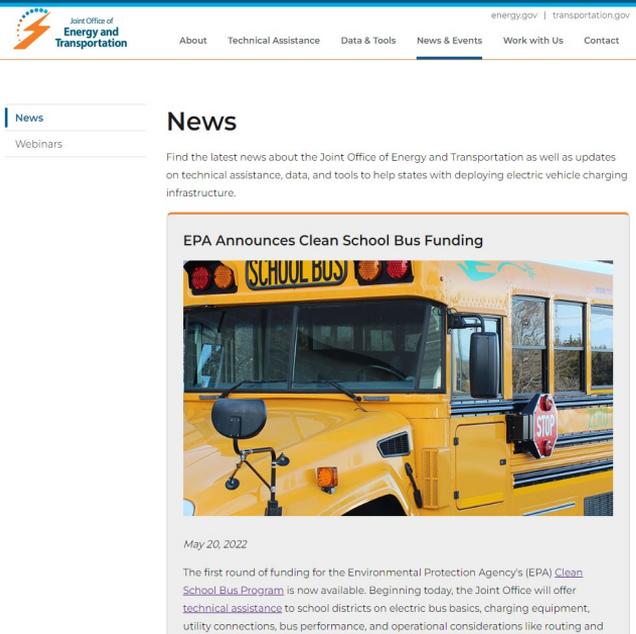
Clean School Bus Technical Assistance

NREL and the Joint Office of Energy and Transportation are partnering with the U.S. EPA to offer clean school bus technical assistance to school districts.

Provides school districts with the knowledge, tools, and information needed to successfully plan for and deploy clean school buses

Email: CleanSchoolBusTA@nrel.gov

driveelectric.gov/contact



The screenshot shows the website for the Joint Office of Energy and Transportation. The header includes the logo and navigation links: About, Technical Assistance, Data & Tools, News & Events, Work with Us, and Contact. The main content area is titled 'News' and contains a news article. The article title is 'EPA Announces Clean School Bus Funding' and features a photograph of a yellow school bus. The date of the article is 'May 20, 2022'. The article text states: 'The first round of funding for the Environmental Protection Agency's (EPA) [Clean School Bus Program](#) is now available. Beginning today, the Joint Office will offer [technical assistance](#) to school districts on electric bus basics, charging equipment, utility connections, bus performance, and operational considerations like routing and

Flipping the Switch on Electric School Buses

- This technical assistance video series is for K-12 schools interested in implementing electric school buses
- Watch the videos in order or pick and choose the topics most interesting or relevant to you.

The screenshot shows the Alternative Fuels Data Center (AFDC) website. The header includes the U.S. Department of Energy logo and navigation links for Energy Efficiency & Renewable Energy, Home, Programs & Offices, and Consumer Information. The main navigation bar features categories like Fuels & Vehicles, Conserve Fuel, Locate Stations, and Laws & Incentives. The current page is titled "Electric School Bus Education" and includes a search bar, a list of related topics, a video introduction, and sections for webinars and handouts.

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Alternative Fuels Data Center

Search the AFDC

FUELS & VEHICLES | CONSERVE FUEL | LOCATE STATIONS | LAWS & INCENTIVES | Maps & Data | Case Studies | Publications | Tools | About | Home

EERE > AFDC > Fuels & Vehicles > Electricity

Electricity Basics

Benefits & Considerations

Stations

Vehicles

Availability

Conversions

Emissions

Batteries

Maintenance & Safety

School Bus Education

F or Fleets

Laws & Incentives

Electric School Bus Education

These educational webinars and handouts provide information about the benefits of electric school buses and examples of their use. Explore the resources in this series called "Flipping the Switch on Electric School Buses" through these topics:

- [Electric School Bus Introduction](#)
- [Working with Electric Utilities](#)
- [Vehicle Requirements](#)
- [Charging Infrastructure](#)
- [Infrastructure Planning and Solutions](#)
- [Vehicle In Use Performance](#)
- [Driver and Technician Training](#)
- [Cost Factors](#)
- [More Resources](#)

Electric School Bus Introduction

This technical assistance video series is for K-12 schools interested in implementing electric school buses. The series kicks off with an introduction to Clean Cities and a discussion about how local Clean Cities coalitions can provide education and technical assistance throughout the implementation process, as well as an introduction to electric school buses, key decision factors, charging infrastructure, and vehicle availability.

Webinars

Clean Cities and Technical Assistance
Electric School Bus Introduction

Playing the Switch on Electric School Buses

[Start Lesson](#)

Handouts

[Part 1: Electric School Bus Introduction](#)

Electric Bus Basics and Key Challenges

afdc.energy.gov/vehicles/electric_school_buses.html



Preparing to Work with Your Utility

Step 1: Identify Location and Utility Contact Info

Location Info

- Shop or Facility Manager
- Someone with Access
- Select a Champion

Utility Info

- Joint Office technical assistance team (CleanSchoolBusTA@nrel.gov)
 - Utility (EEI/BEL Utility Pledge)
- NEVI-U Finder

Electric School Bus (ESB) Charging Station Planning Form				
				[LOCATION SHORT NAME]
LOCATION CONTACT AND INFO				
Location Address	Point of Contact Name	Email	Phone Number	
STEP 1 UTILITY CONTACT AND INFO				
Utility Name	Utility Point of Contact Name	Email	Phone Number	Customer Account Number

Step 1 (cont.): Utility Rates and Fees

- Demand charges can significantly increase your electric bill especially with DC Fast Chargers
 - Ex. District installs five 50 kW DCFCs which are all used at the same time of day. The demand charge is \$10/kW.
 - Results in an additional monthly demand fee of \$2500 (5 x 50kW x \$10)
 - Possible Solution: lower power chargers or managed charging
- Time of Day/Time of Use charges may make it advantageous to charge at certain times
 - Possible Solution: Managed charging
- Talk to your utility:
 - Are you subject to these types of charges?
 - Are there alternative options, programs, or rates available to reduce fees related to ESB charging?

What energy rates or demand charges are applicable at this location?	
What incentives are offered by your utility that may be incorporated into this program?	

NEVI U-Finder

- Who are the **local utilities** and what **charging infrastructure incentives** are available?

NEVI U-Finder: State Utility Summary

Enter State abbreviation to identify active utilities and electric vehicle support programs.

CO Powered by the U.S. Utility Rate Database (<https://openei.org/apps/USURDB/>)
Utility territories last updated February 2021.



See Introduction worksheet for notes on using NEVI U-Finder.

***Customer Types:**

G: Government or Public; C: Commercial; R: Residential

Identified active utilities in CO

Utility	Utility Name	Utility Alias, Parent, or Alternative Name	Utility Ownership	Available EVSE Funding?*	Available Advisory Services?*	% of State ZIP Codes
1	Public Service Co of Colorado	Xcel Colorado	INVESTOR	GCR	GCR	53%
2	Black Hills/Colorado Elec.Utility Co. LP	Black Hills Energy	INVESTOR			14%
3	Intermountain Rural Elec Assn	---	COOPERATIVE			12%

Enter ZIP Code to identify local utilities, electric vehicle support programs, and Clean Cities Coalitions.

80465 Powered by the U.S. Utility Rate Database (<https://openei.org/apps/USURDB/>)
Utility territories last updated February 2021.

See Introduction worksheet for notes on using NEVI U-Finder.

Edison Electric Institute Investor Owned Utility Incentives

For more details see "EEI Database" worksheet

Increase row heights to view complete details.

Incentive	EEI Electric Company	EEI Holding Company	Program Name	Description
1	Public Service of Colorado	Xcel Energy	Advisory Services	Residential and MFH (education & outreach); fleets (assessments & outreach); community advisory services (plan & implementation).
2	Public Service of Colorado	Xcel Energy	Public and Community	Public and Community Charging Hub EV Solutions help expand Level 2 and fast
3	Public Service of Colorado	Xcel Energy	School Bus Electrification	School districts can earn a rebate to offset the costs for procuring qualifying electric
4	Public Service of Colorado	Xcel Energy	Fleet Electrification	Advisory services for any business or organization ready to develop an electrification

<https://driveelectric.gov/resources/>

Step 2: Gather Your Existing Fleet Data

Utility will need to understand:

- Fleet size and makeup (including white fleet)
- Current ESBs or charging infrastructure
- Possible charging strategies



STEP 2 EXISTING FLEET INFO

Total Bus Fleet Size at Location	Total # of ESBs Currently at Location	Total # of Level 2 Chargers Currently Installed	Total # of DC Fast Chargers Currently Installed	Is there a Potential Central Fast Charging Area at the Location?	Total Type A Buses at Location	Total Type C & D Buses at Location	Total White Fleet Vehicles at Location	Is Mid-Day Charging a Possibility?	Comments

Step 3: Define your ESB Acquisition Plans

- Include short and long-term plans
- Consider which routes ESBs will be placed on
- When are charging opportunities?



STEP 3 ELECTRIC SCHOOL BUS ACQUISITION PLANS

Year One			Year Two				Future Years			
Total ESBs to be Acquired This Year	Expected Route Distance of ESBs (Min/Max)	Mid-Day Dwell Time (Min/Max)	Number and Types of Chargers to be Installed This Year	Total ESBs to be Acquired This Year	Expected Route Distance of ESBs (Min/Max)	Mid-Day Dwell Time (Min/Max)	Number and Types of Chargers to be Installed This Year	Total ESBs to be Acquired	Expected Route Distance of ESBs (Min/Max)	Mid-Day Dwell Time (Min/Max)

Power Requirements

Bus efficiency (kWh/mile)
Route distance (miles)
Dwell time (hours)
Energy (kWh)
Power [Charger Power Rating] (kW)
State of charge [SOC] (%)

Calculate Your Energy Used Per Route

Efficiency (kWh/mi)	x	Distance (miles)	=	Energy (kWh)
1.5		50		75

Calculate Your EVSE Power Needs

Energy (kWh)	/	Dwell Time (hours)	=	Power (kW)
75		3		25

Calculate Your Energy per Charging Session

Power (kW)	x	Dwell Time (hours)	=	Energy (kWh)
25		3		75

Charging Analysis

- **Bus:** Type C
- **Route:** 65 miles
- **Battery:** 315 kWh
- **Bus efficiency:** 2.3 kWh/mile
- **Route energy:** 65 miles x 2.3 kWh/mile = 149.5 kWh
- **Dwell Time:** 3 hours of charging time mid day and 12 hours in the evening

Mid-Day Top Off to 100%		No Mid-Day Charging		Alternative Charging Strategy	
Mid-day SOC	53%	Mid-day SOC	53%	Mid-day SOC	53%
Mid-day Charger Power Rating (kW)	49.8	Mid-day Charger Power Rating (kW)	0.0	Mid-day Charger Power Rating (kW)	19.2
Afternoon Beginning SOC	100%	Afternoon Beginning SOC	53%	Afternoon Beginning SOC	71%
Evening SOC	53%	Evening SOC	5%	Evening SOC	23%
Evening Charger Power Rating to fully replenish battery (kW)	12.5	Evening Charger Power Rating to fully replenish battery (kW)	24.9	Evening Charger Power Rating to fully replenish battery (kW)	20.1

Charger Selection

	Level 2 AC	DC Fast Charger (DCFC)
Power Levels	3-19 kW	15-350+ kW
Facility Power	Single or 3-Phase	Requires 3-Phase Power
Cost	\$-\$\$	\$\$\$-\$\$\$\$
Applicability	Lower power, longer durations *should be sufficient for most bus routes	Quick top offs and longer routes that require mid-day charging
Bus Compatibility	AC charging not available on certain ESB models	DCFC is compatible on all current ESB OEM offerings
Network	Both networked and non-networked available	Must be connected to a network
CSB Requirements	Energy Star Certified required	NRTL Listing recommended
Grid Impact	Less Infrastructure Required	More Infrastructure Required

Step 4: Identify Potential Charger Locations

- Considerations for best sites
 - Existing parking
 - Panels with spare breakers
 - Close to panels
 - Close to walls or limited trenching
- Installation costs
 - Lower with shorter distance and less complicated or no trenching
 - Higher with longer distances, trenching, and more equipment



Location Name/Description	Total Parking Spaces	Number of ESBs Currently in This Area	Number of Level 2 Chargers Currently in This Area	Number of DC Fast Chargers Currently in This Area	Distance: Parking Spaces to Service Panel (feet)	How Many Parking Spaces are Along a Wall?	How Many Parking Spaces Have Unused Wall Outlets?

Step 4 (cont.): Building-Level Energy Data

Fleet/facility or utility identifies:

- Service panel rating
- Service panel peak load
- Transformer rating
- Transformer peak load



Service Panel Spare Breaker Positions	Service Panel Main Breaker Rating (voltage and amps)	Service Panel Peak Load (amps)	Distance: Parking Spaces to Transformer (feet)	Transformer Rating (kVA)	Transformer Peak Load (kVA)

Step 6: Ask Additional Questions

Who owns the facilities and parking lots where the chargers will be sited?

Are there permitting requirements?

Do you have a facility load management system or demand meter?

Will charging access be limited to fleet vehicles (by a fence or network)? Is workplace charging a possibility at this location?

Please provide a map of the parking lot and building indicating the location where chargers are proposed and where the transformers and service panels are located.

Do you have a dedicated electrician at your facility?

Do you have any additional comments, questions, or concerns?

Electric School Bus (ESB) Charging Station Planning Form

[LOCATION SHORT NAME]

LOCATION CONTACT AND INFO

Location Address	Point of Contact Name	Email	Phone Number
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STEP 1 UTILITY CONTACT AND INFO

Utility Name	Utility Point of Contact Name	Email	Phone Number	Customer Account Number
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What energy rates or demand charges are applicable at this location?

What incentives are offered by your utility that may be incorporated into this program?

STEP 2 EXISTING FLEET INFO

Total Bus Fleet Size at Location	Total # of ESBs Currently at Location	Total # of Level 2 Chargers Currently Installed	Total # of DC Fast Chargers Currently Installed	Is there a Potential Central Fast Charging Area at the Location?	Total Type A Buses at Location	Total Type C & D Buses at Location	Total White Fleet Vehicles at Location	Is Mid-Day Charging a Possibility?	Comments

STEP 3 ELECTRIC SCHOOL BUS ACQUISITION PLANS

Year One				Year Two				Future Years		
Total ESBs to be Acquired This Year	Expected Route Distance of ESBs (Min/Max)	Mid-Day Dwell Time (Min/Max)	Number and Types of Chargers to be Installed This Year	Total ESBs to be Acquired This Year	Expected Route Distance of ESBs (Min/Max)	Mid-Day Dwell Time (Min/Max)	Number and Types of Chargers to be Installed This Year	Total ESBs to be Acquired	Expected Route Distance of ESBs (Min/Max)	Mid-Day Dwell Time (Min/Max)

STEP 4 POTENTIAL CHARGER LOCATIONS

Location 1	Location Name/Description	Total Parking Spaces	Number of ESBs Currently in This Area	Number of Level 2 Chargers Currently in This Area	Number of DC Fast Chargers Currently in This Area	Distance: Parking Spaces to Service Panel (feet)	How Many Parking Spaces are Along a Wall?	How Many Parking Spaces Have Unused Wall Outlets?
	Location Comments	Service Panel Spare Breaker Positions	Service Panel Main Breaker Rating (voltage and amps)	Service Panel Peak Load (amps)	Distance: Parking Spaces to Transformer (feet)	Transformer Rating (kVA)	Transformer Peak Load (kVA)	

Location 1	Location Name/Description	Total Parking Spaces	Number of ESBs Currently in This Area	Number of Level 2 Chargers Currently in This Area	Number of DC Fast Chargers Currently in This Area	Distance: Parking Spaces to Service Panel (feet)	How Many Parking Spaces are Along a Wall?	How Many Parking Spaces Have Unused Wall Outlets?
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STEP 5 CALCULATE POWER NEEDS

Energy Per Route (kWh) Bus Efficiency (kWh/mi) x Route Distance	
Power Needs Per Charger (kW) Energy (kWh) / Dwell Time (hours)	
Required Energy Per Charging Station (kWh) Charger Power Needs (kW) x Dwell Time (hours)	

STEP 6 ADDITIONAL QUESTIONS

Who owns the facilities and parking lots where the chargers will be sited?	
Are there permitting requirements?	
Do you have a facility load management system or demand meter?	
Will charging access be limited to fleet vehicles (by a fence or network)? Is workplace charging a possibility at this location?	
Could you provide a map of the parking lot and building, indicating the location where chargers are proposed and where the transformers and service panels are located.	
Do you have a dedicated electrical of your facility?	
Do you have any additional comments, questions, or concerns?	

For assistance, please contact CleanSchoolBus@Allnet.gov



Utility Interconnection

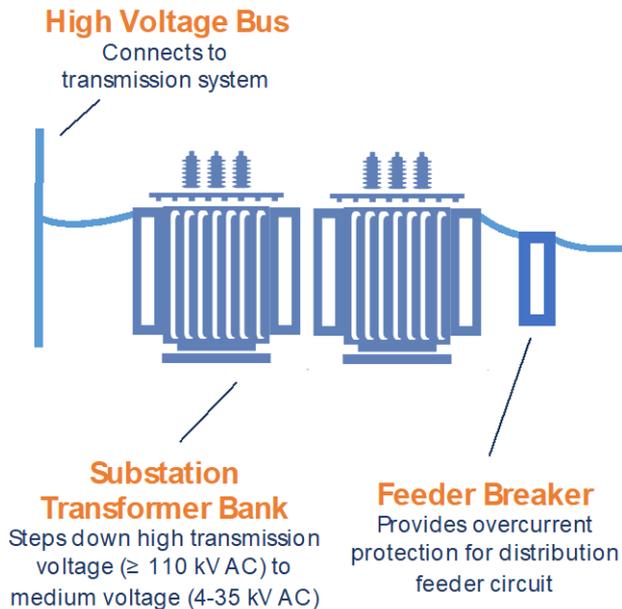


Utility Infrastructure

Understand how electricity is delivered to a facility
and how EV chargers can impact that equipment

Distribution Substation

Lowers voltage from transmission lines and protects downstream distribution system



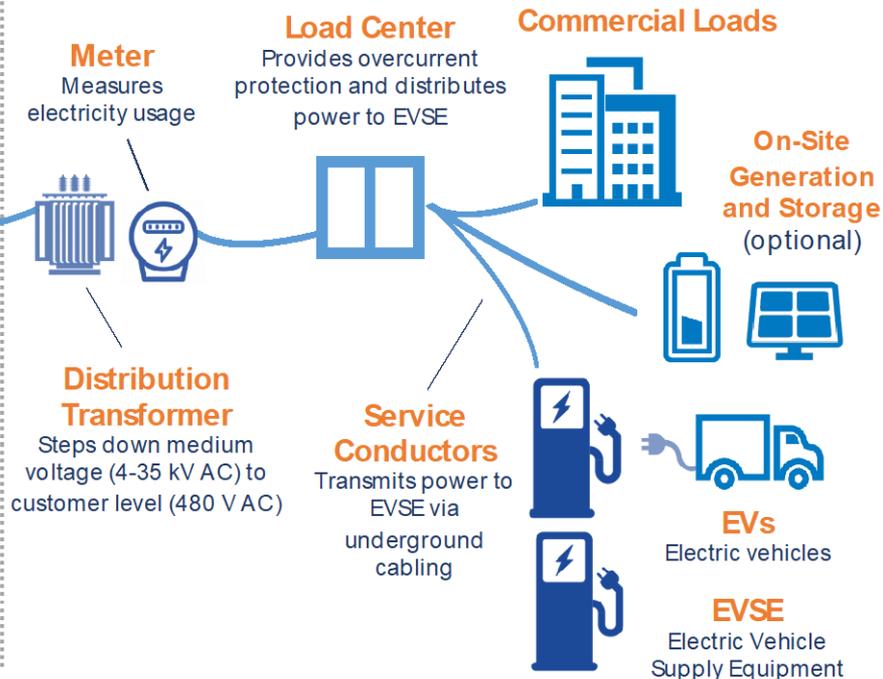
Distribution Feeders

Distributes electricity to end users



On-Site

Lowers voltage to customer level (if secondary service) and distributes electricity throughout property

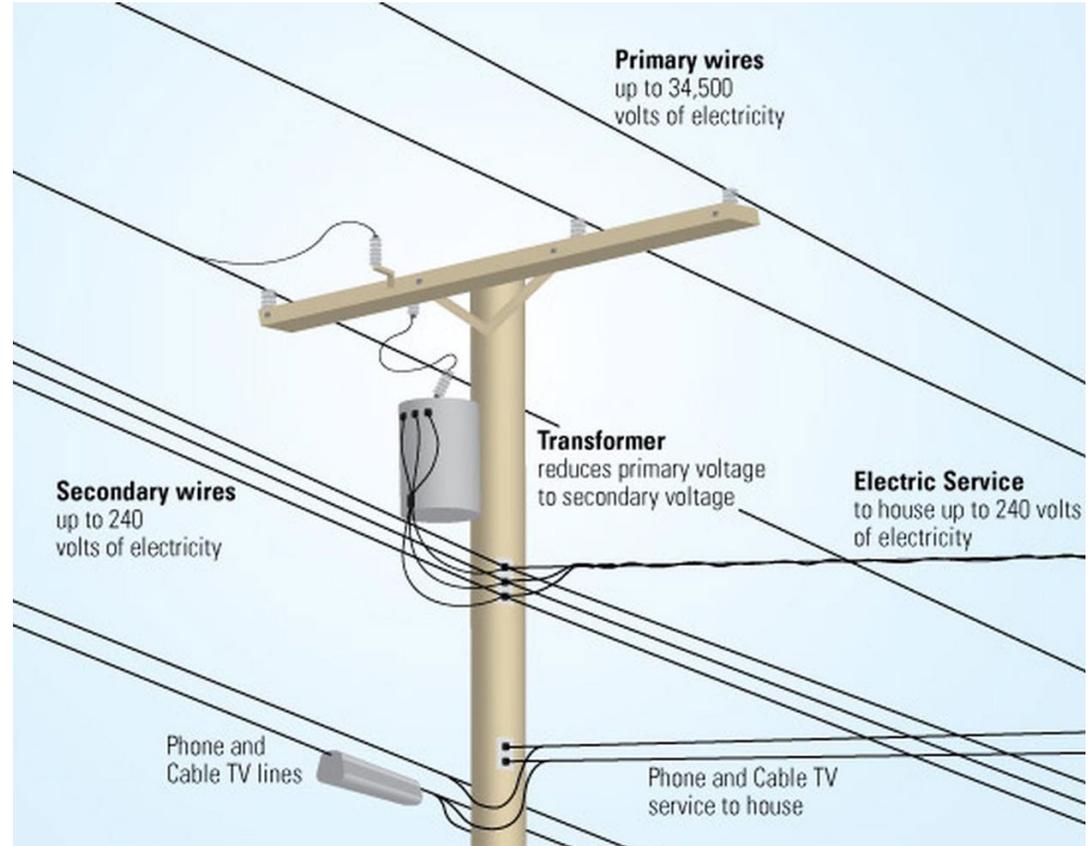


SOURCE: Borlaug et al., "Heavy-Duty Trucks: Opportunities for Electrification and the Electricity Distribution System Requirements for Depot Charging", Forthcoming.

Utility Infrastructure Outline

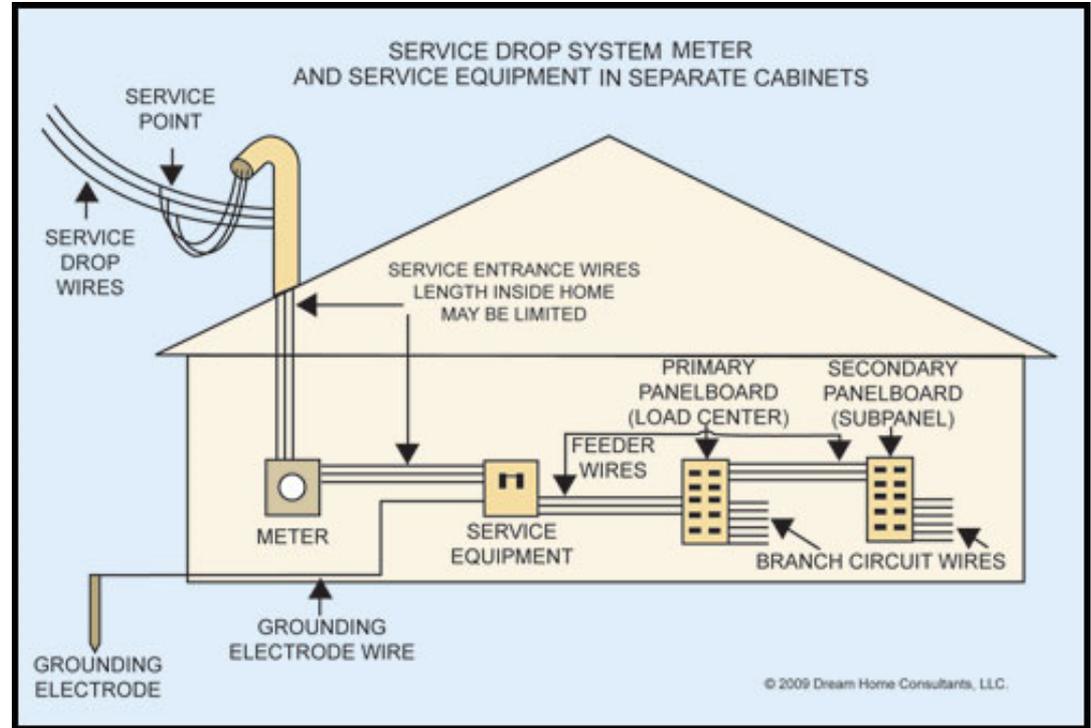
Main Feeder

- **Primary Lines:** Conductor lines distributing energy throughout feeder
- **Transformer:** Reduces primary line medium voltage down to low voltage service level
- **Secondary Bank:** Conductor lines carrying electricity at low voltages to multiple service points
- **Service Lines:** Conductor lines providing electric service to individual locations



Service Drop

- **Meter:** Measures energy flow in kWh
- **Primary Panel:** Electric panel with breakers protecting branch circuits
- **Secondary Panel:** Sub-panel fed downstream from primary panel
- **Branch Circuit:** A group of loads protected by a circuit breaker



Discussion Topics

- Total charger needs
- Facility capacity
- Grid capacity
- Future plans

- How many chargers are needed and what will be the charging power (in kW) of each?
- Where will new chargers be installed and can facility infrastructure support the new load?
- If facility equipment must be upgraded, can the grid support the new higher load?



Site Equipment

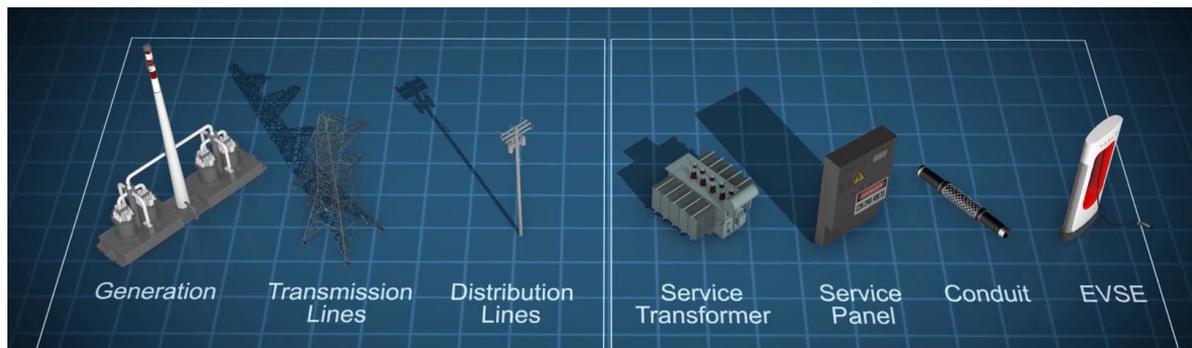
- **Circuit breaker:** NEC 625.41: overcurrent protection shall be rated for 125% of the maximum EV charger load
- **Panel capacity:** Spare breaker positions must be available
- **Main breaker:** Must be sized large enough to supply the peak coincident demand from all branch circuits
- **Transformer capacity:** Distribution transformer must be large enough to supply peak load demand



Infrastructure Upgrades

The electric utility company is most interested in building the grid infrastructure needed to supply the energy and peak power your facilities and new EV chargers will require

- Grid upgrade concerns
 - New service line
 - New interconnection
 - Transformer upgrade
- Facility upgrade concerns
 - Additional branch circuits
 - Service panel upgrade
 - Transformer upgrade





Utility Rates and Solutions

Different rate elements and utility programs that affect the cost of charging EVs and the solutions that can help mitigate them

Energy Charge

- Price rate of energy per unit consumed
- (\$/kWh)

Demand Charge

- Price rate of peak power in a given period
- (\$/kW)

Fixed Charge

- Constant fee applied each billing period
- (\$/month)

Flat Charge

- Fee applied independent of time, season, or billing period
- (\$)

Time-of-use

- Price rate of energy dependent on time and/or season
- Varying (\$/kWh) or (\$/kW)

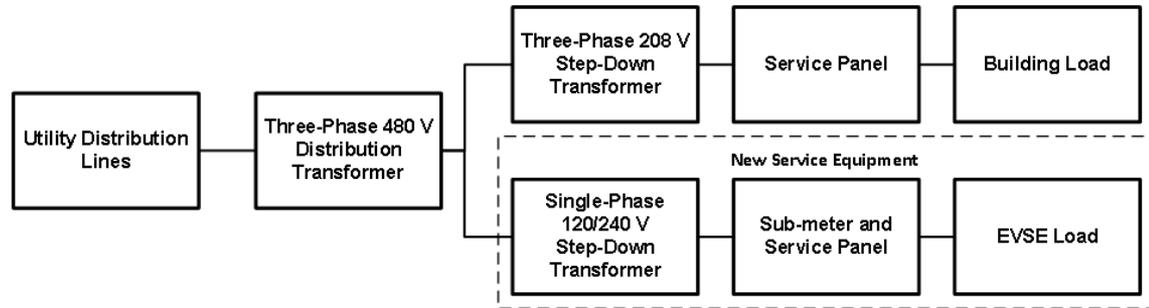
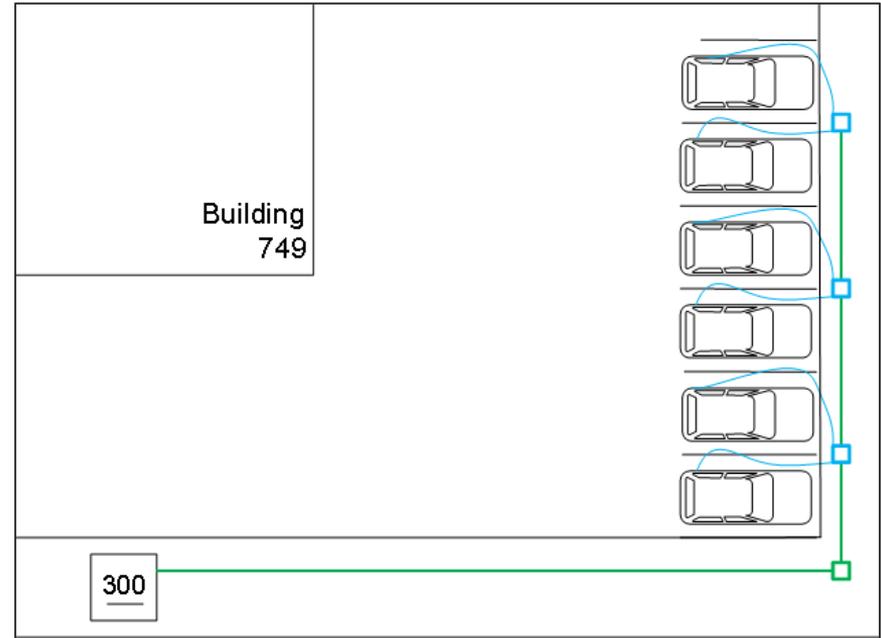
Tiered

- Each unit up to a base amount is charged one unit price, with additional energy charged at a higher unit price
- Increasing (\$/kWh) or (\$/kW)

Utility Rate Terminology

Mitigate Upgrade Costs

- All equipment owned by the utility and facility must be rated to support the **highest possible load**
- Installing EV chargers could increase loads beyond equipment ratings (**requiring upgrades**)
- Total EV charging can be limited by a managed charging **power ceiling** or **power sharing** feature to avoid overloading equipment and mitigate upgrade costs

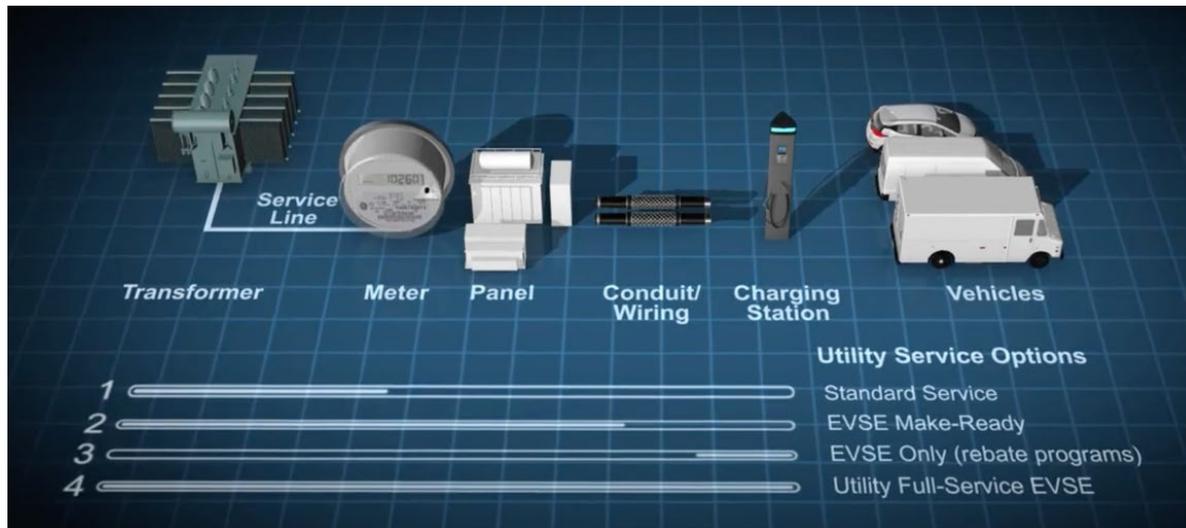
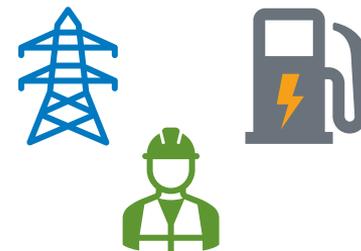


Interconnection Solutions

Utilities are beginning to offer customers new and innovative service options to meet EV energy needs.

Programs that can support EV charging infrastructure installation through infrastructure development or financial support:

- Standard service
- EV charger make-ready
- EV charger rebates
- Utility full-service



Discussion Topics

- Peak demand
- Demand charges
- Upgrade needs
- Mitigation options

- Work with fleet and facility operations to determine if peak demand will increase
- Discuss with utility if demand charges will increase or if upgrades will be needed
- Consider possible mitigation techniques like managed charging



Contact Us

Use this contact form to submit a media inquiry, ask a general question about Joint Office of Energy and Transportation resources and activities, or request technical assistance for states, tribal nations, or clean school buses or transit buses.

Required fields are marked with an asterisk (*).

Inquiry type *

Name *

Email *

Subject *

Message *

driveelectric.gov/bus-contact

CleanSchoolBusTA@nrel.gov

- Request assistance via online form

- Initial response within 48 hours

- General questions and feedback welcome!



Joint Office of
**Energy and
Transportation**

Thank You

February 9, 2023

CleanSchoolBusTA@nrel.gov

driveelectric.gov

Question & Answer Session



Upvote and comment on questions similar to your own.
Type your full thought so we can follow-up with an answer.
Speak slowly and clearly for the captioner/interpreter.

cleanschoolbus@epa.gov
epa.gov/cleanschoolbus

Next Steps – *How to Apply*



1. Visit the Clean School Bus Website for Tools & Resources



2. Register your Organization with Grants.gov and SAM.gov



3. Prepare Application Package



4. Submit Application Package on Grants.gov by August 22nd at 11:59PM ET



Application packages must be submitted to EPA via Grants.gov no later than 8/22/23 at 11:59 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.



**EPA CLEAN
SCHOOL BUS**

2023 CSB NOFO

- Application packages must be submitted to EPA via Grants.gov no later than **8/22/23 at 11:59 p.m. ET.**
- Dates and topics for future webinars are on our website under the 'Webinars' section.

Future Funding Opportunities

- EPA encourages school districts to consider which competition structure (grants or rebates) best suits their needs.
- EPA anticipates opening a rebate program in fall 2023.

Resources

- [EPA's CSB Program website](#)
- The Joint Office of Energy and Transportation (cleanschoolbusTA@nrel.gov)
- The CSB helpline (cleanschoolbus@epa.gov)

Stay in Touch

- View the full 2023 CSB Grant NOFO at epa.gov/cleanschoolbus/clean-school-bus-program-grants
- Submit questions to cleanschoolbus@epa.gov
- Don't miss any updates! To sign up for the listserv, please visit epa.gov/cleanschoolbus.



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