



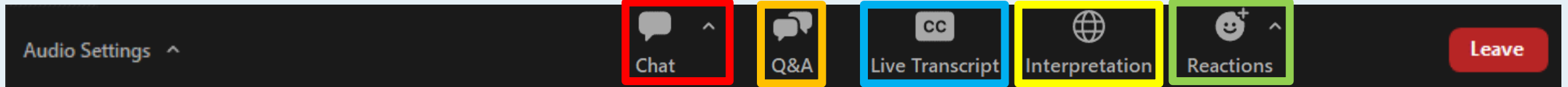
EPA CLEAN SCHOOL BUS

**2023 CSB Rebates: Technical Assistance Overview and Utility Planning
w/ Joint Office of Energy and Transportation (JOET)**

October 12, 2023 @ 1 PM ET

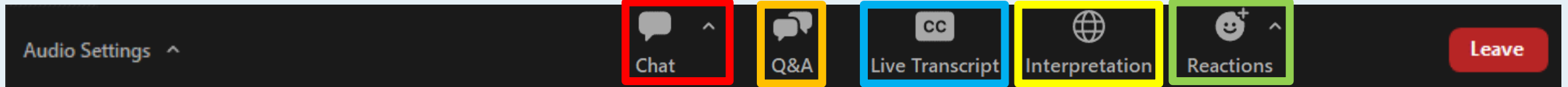
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Logística de seminarios web en Zoom



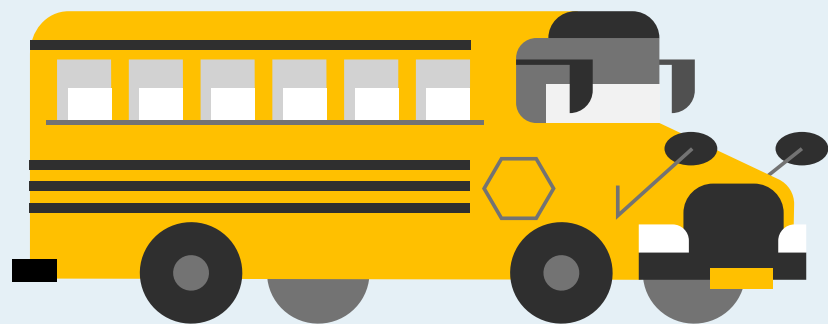
- **Esta presentación es grabada.** Las diapositivas y la grabación se publicarán en epa.gov/cleanschoolbus tan pronto sean procesadas para su publicación.
- **Todos los asistentes se encuentran solo en modo escucha.** Hay audio disponible a través de los altoparlantes de su computadora o por teléfono. El presentador le pedirá que quite el silencio si corresponde.
- **Transcripción en vivo:** Hay subtítulos disponibles haciendo clic en el icono “Live Transcript” [Transcripción en vivo].
- **Interpretación en vivo:** Hay interpretación en español disponible haciendo clic en el icono “Interpreting” [Interpretación] y seleccionando el español. Haga clic en “Mute Original Audio” [Silenciar audio original] para silenciar el audio en inglés al escuchar en español.
- **Preguntas:** Use la función Q&A [preguntas y respuestas] para hacer preguntas durante la presentación. Abordaremos todas las que sea posible después de la presentación. Si no podemos contestar su pregunta en este momento, anotaremos todas las preguntas y respuestas en el documento Q&A correspondiente disponible en nuestro sitio web. Puede también enviar preguntas por escrito a la línea directa de ayuda del Programa de Autobuses Escolares Limpios de la EPA en cleanschoolbus@epa.gov.
- **Chat:** Se encuentra inhabilitado el chat, pero los presentadores podrían compartir enlaces a través de la función de chat.
- **Reacciones:** Las reacciones están habilitadas para que usted interactúe con el presentador.

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.
- **All attendees are in listen-only mode.** Audio is available through your computer speakers or by phone. The presenter will ask you to come off mute if applicable.
- **Live transcription:** Live captioning is available by clicking the “Live Transcript” icon.
- **Live interpretation:** Live Spanish interpretation is available by clicking the “Interpretation” icon and selecting Spanish. Click “Mute Original Audio” to mute English audio when listening in Spanish.
- **Questions:** Use the Q&A feature to ask questions during the presentation. We will address as many as possible after the presentation. If we are unable to answer your question at this time, we will list all questions and answers in the Q&A document available on our website. You can also submit written questions to the EPA Clean School Bus Program helpline at cleanschoolbus@epa.gov.
- **Chat:** Chat is disabled, but the presenters might share links through the chat feature.
- **Reactions:** Reactions are enabled for you to interact with the presenter.

Live Transcription / Transcripción simultánea

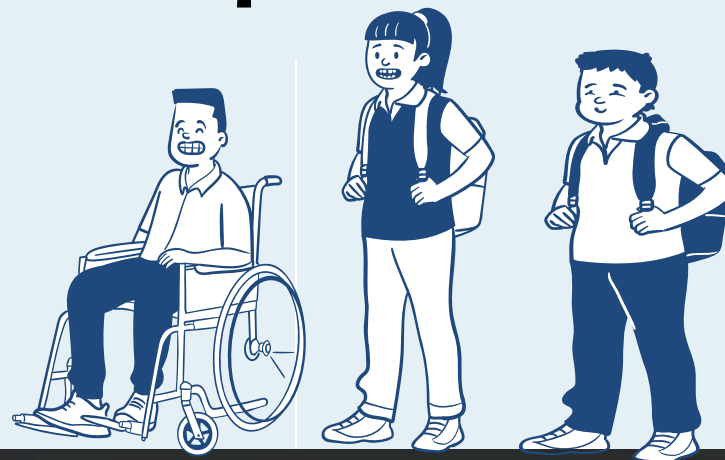


Live transcript is available

CC

Live Transcript

Live Spanish Interpretation / Interpretación simultánea



✓ Off

English

Spanish

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Interpretation

AGENDA

Overview of the Clean School Bus
(CSB) Program

2023 CSB Rebate Program Overview

Technical Assistance Overview and
Utility Planning w/ JOET

Q&A

Next Steps and Resources

Overview of the Clean School Bus Program

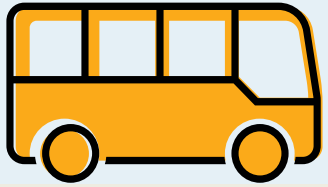
Bipartisan Infrastructure Law

- 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.

CSB Funding Opportunities

- EPA has offered rebates and grants in past funding opportunities.
- EPA is offering another round of rebate funding.
- The 2023 Rebates is the third CSB funding opportunity.





Why Clean School Buses?



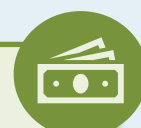
Reduced Greenhouse Gas Emissions

CSBs emit zero or low tailpipe emissions.



Cleaner Air

CSBs result in cleaner air on the bus, in bus loading areas, and in the communities in which they operate.



Cost Savings

Replacing older diesel school buses with CSBs often reduces maintenance and fuel costs.



Resiliency

Vehicle-to-Grid (V2G) capable CSBs can provide power to the grid or buildings during power shutdowns.



Improved Student Attendance & Achievement

The transport of students with CSBs has been linked to student attendance and academic achievement improvements.

2023 CSB Rebate Program Overview



EPA is offering at least **\$500 million** for clean school buses and ZE school buses. EPA may modify this amount based on the applicant pool and other pertinent factors. Funds are subject to availability and total awards may be higher or lower than the anticipated funds offered update if changed.



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.



Application packages must be submitted to EPA no later than 1/31/24 at 4:00 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 \$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

*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.

ADA-Compliant Buses:



Applicants can request up to an **additional \$20k** to purchase ADA-compliant clean school buses of any fuel type equipped with wheelchair lifts.



High Shipping Costs:

Applicants in non-contiguous U.S. states and territories will receive up to an **additional \$20k** per bus to cover high bus shipping costs.



Tax Credits:

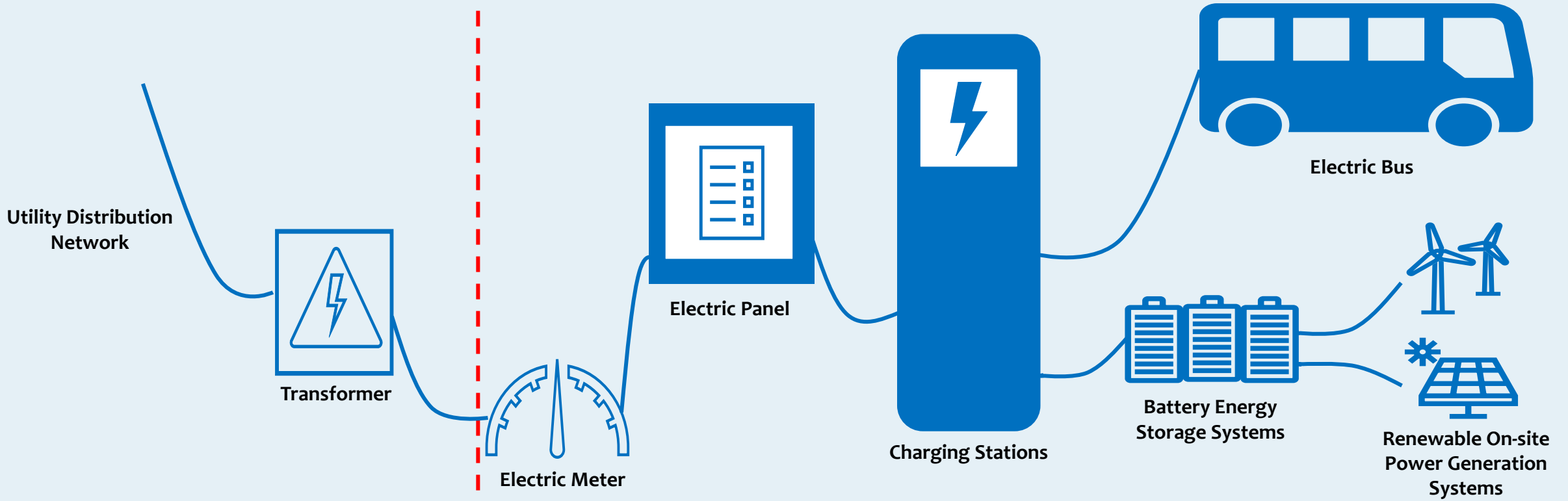
Selectees may be eligible for IRA tax credits applicable to their bus and infrastructure purchase(s) not reflected in the funding table.

Application packages must be submitted to EPA no later than 1/31/24 at 4:00 p.m. ET.

For more information, please visit www.epa.gov/cleanschoolbus.

Non-Eligible Expenses

Eligible Expenses



Front-of-the-Meter (FTM)

Behind-the-Meter (BTM)

Application packages must be submitted to EPA no later than 1/31/24 at 4:00 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.

CSB Program Website Tools and Resources



Technical Assistance

- ➔ • [Clean School Bus Technical Assistance](#)
- ➔ • [Charging and Fueling Infrastructure Resources](#)



Workforce Development

- ➔ • [Bus Manufacturer Job Quality and Workforce Development Practices](#)
- ➔ • [Workforce Development and Training Resources](#)



Educational Materials

- ➔ • [Clean School Bus Reports to Congress](#)
- ➔ • [Benefits of Clean School Buses](#)

All links can be found on: [epa.gov/cleanschoolbus](https://www.epa.gov/cleanschoolbus)

EPA 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 and Preparing to Work with Your Utility

Clean School Bus Program Webinar

Oct. 12, 2023

driveelectric.gov

Agenda

- Introductions
- Technical assistance overview
- Utility interconnection
 - Utility infrastructure
 - Utility rates and solutions
- Working with your utility
 - How to talk with your utility
 - Electric School Bus (ESB) Charging Station Planning Form



Electric School Bus Technical Assistance

NREL and the Joint Office of Energy and Transportation (Joint Office) are partnering with the U.S. Environmental Protection Agency to offer **FREE** clean school bus technical assistance to school districts receiving funds or planning to apply.

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

Clean School Bus Technical Assistance

CleanSchoolBusTA@nrel.gov
driveelectric.gov/contact



energy.gov | transportation.gov

Joint Office of Energy and Transportation


About Technical Assistance Data & Tools News & Events Work with Us Contact

News

Webinars

Find the latest news about the Joint Office of Energy and Transportation as well as updates on technical assistance, data, and tools to help states with deploying electric vehicle charging infrastructure.

EPA Announces Clean School Bus Funding



May 20, 2022

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

Examples of How We Can Help

Coordinating
with electric
utilities

Identifying
available
funding and
incentives

Analyzing
charging
infrastructure
needs

Conducting
route analysis
and planning

Conducting
training and
workforce
development

drives

Opportunities
for resiliency
(V2X)

Analyzing
energy needs
and grid
impact

Identifying
solar and
battery storage
opportunities

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' website. The header includes the U.S. Department of Energy logo and navigation links for 'Energy Efficiency & Renewable Energy', 'EERE Home', 'Programs & Offices', and 'Consumer Information'. The main navigation bar features 'Alternative Fuels Data Center' and a search box. Below this, there are tabs for 'FUELS & VEHICLES', 'CONSERVE FUEL', 'LOCATE STATIONS', and 'LAWS & INCENTIVES'. The 'FUELS & VEHICLES' tab is active, showing a sidebar with categories like 'Electricity Basics', 'Benefits & Considerations', 'Stations', 'Vehicles', 'Availability', 'Conversions', 'Emissions', 'Batteries', 'Maintenance & Safety', 'School Bus Education', 'For Fleets', and 'Laws & Incentives'. The 'School Bus Education' category is selected, leading to the 'Electric School Bus Education' page. This page features a list of resources: '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', and 'More Resources'. A large image of a yellow electric school bus is displayed. Below the image, the 'Electric School Bus Introduction' section is highlighted, with a description: '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.' The page also includes sections for 'Webinars' and 'Handouts'. The 'Webinars' section features a video player for 'Clean Cities and Technical Assistance: Electric School Bus Introduction' and a link to 'Text Version'. The 'Handouts' section includes a link to 'Part 1: Electric School Bus Introduction'.

https://afdc.energy.gov/vehicles/electric_school_buses.html



Utility Interconnection



driveelectric.gov | 19

Utility Infrastructure

Understand how electricity is delivered to a facility and how electric vehicle (EV) chargers can impact that equipment.

Distribution Substation

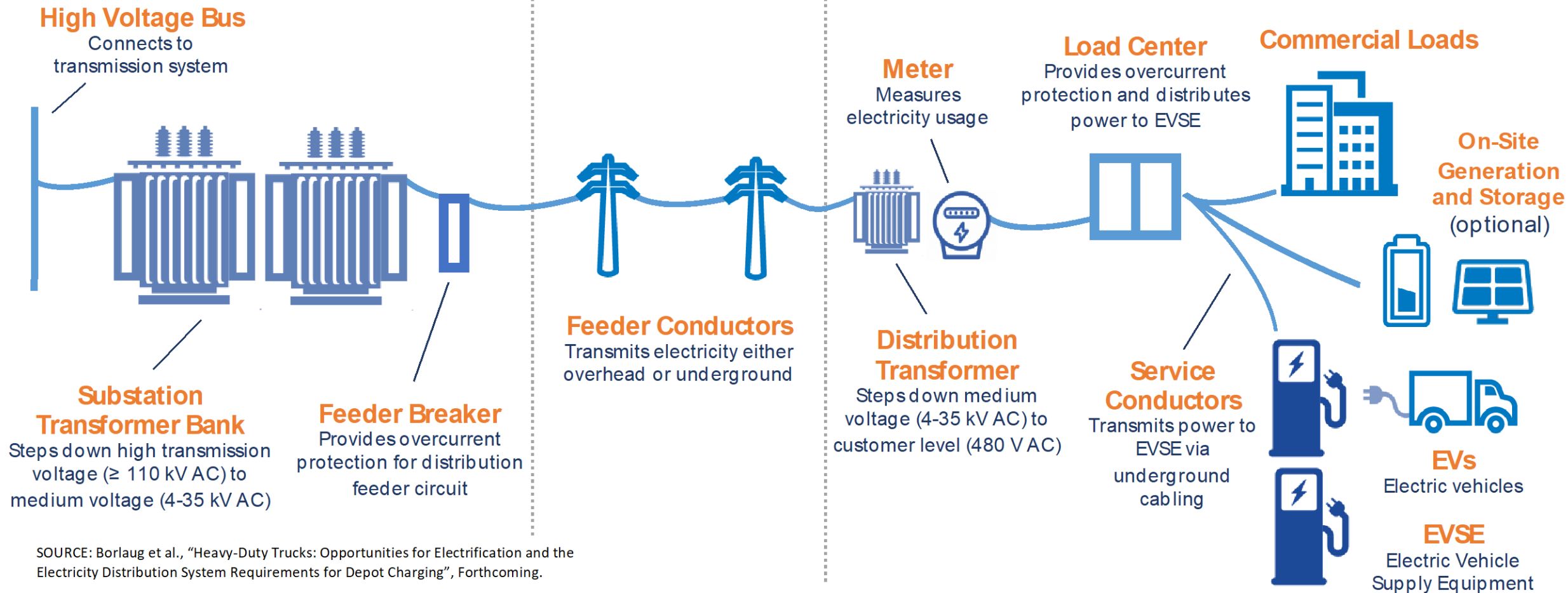
Lowers voltage from transmission lines and protects downstream distribution system

Distribution Feeders

Distributes electricity to end users

On-Site

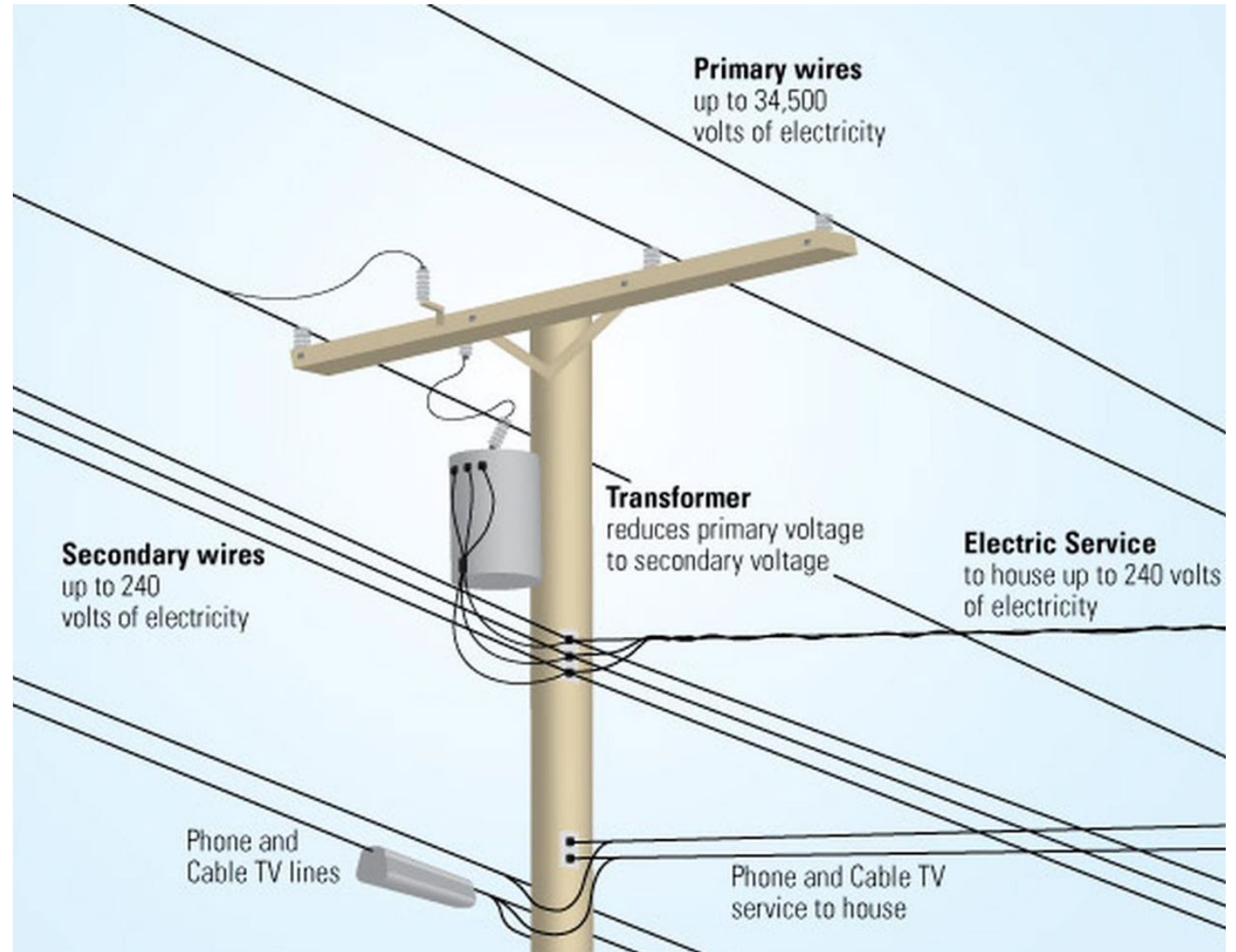
Lowers voltage to customer level (if secondary service) and distributes electricity throughout property



Utility Infrastructure Outline

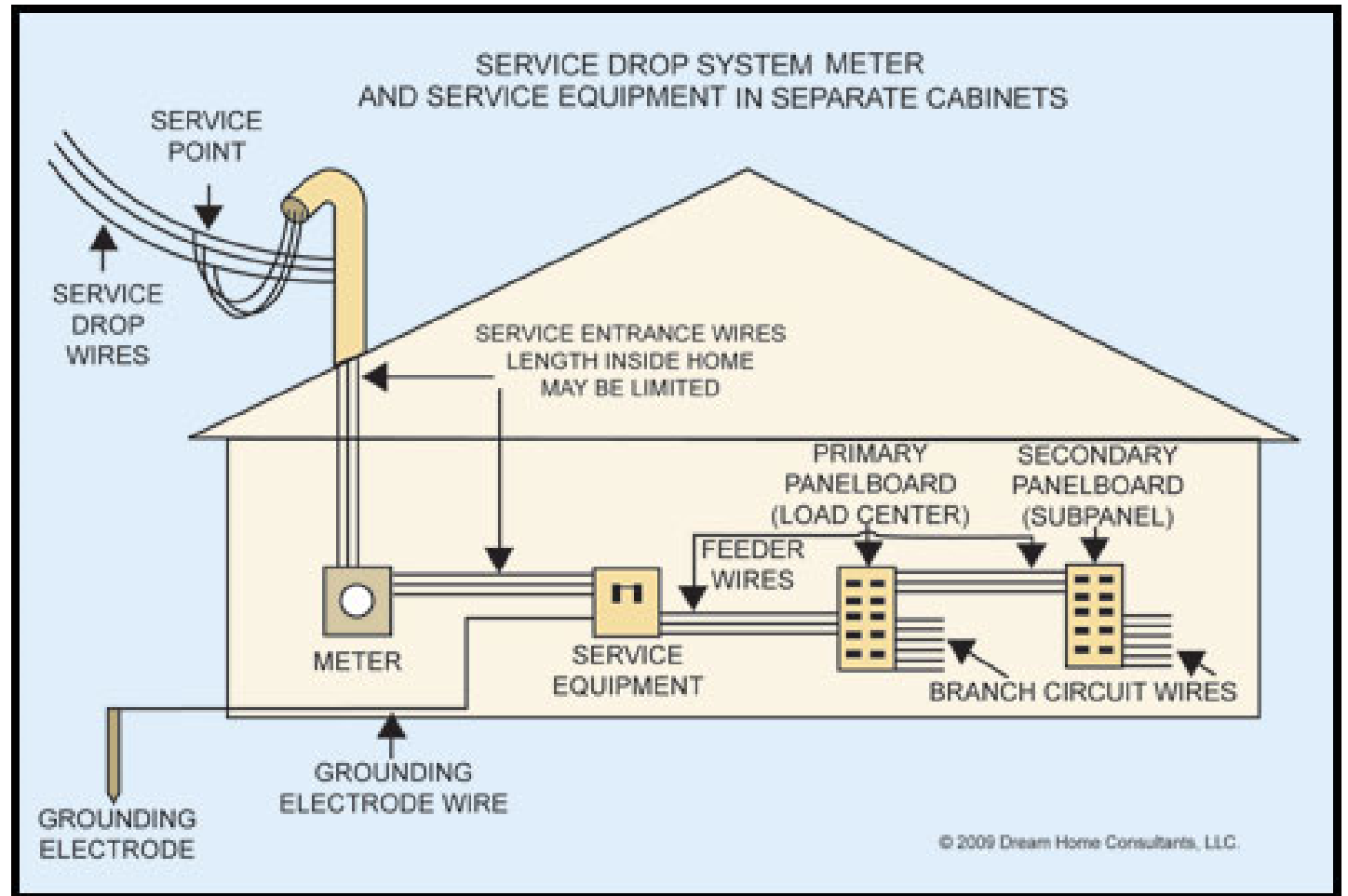
Main Feeder

- **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 kilowatt-hours (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
- Futureproofing

- How many chargers are needed and what will be the charging power in kilowatt (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

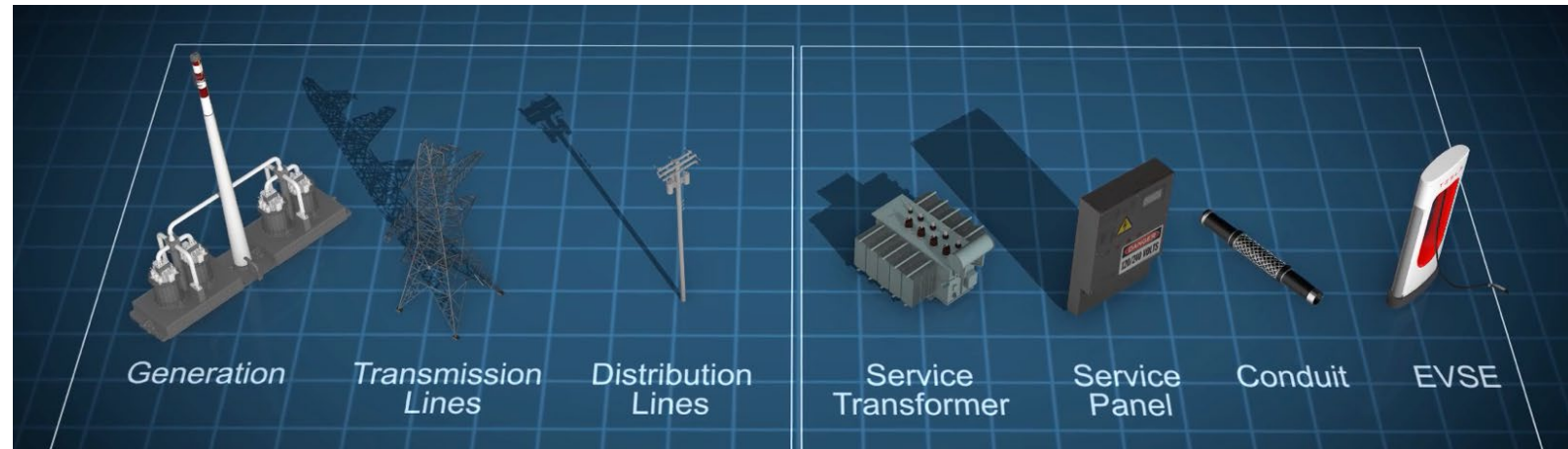
The electric utility company is most interested in building the grid infrastructure needed to supply the energy and peak power your facilities and new EV chargers will require.

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)

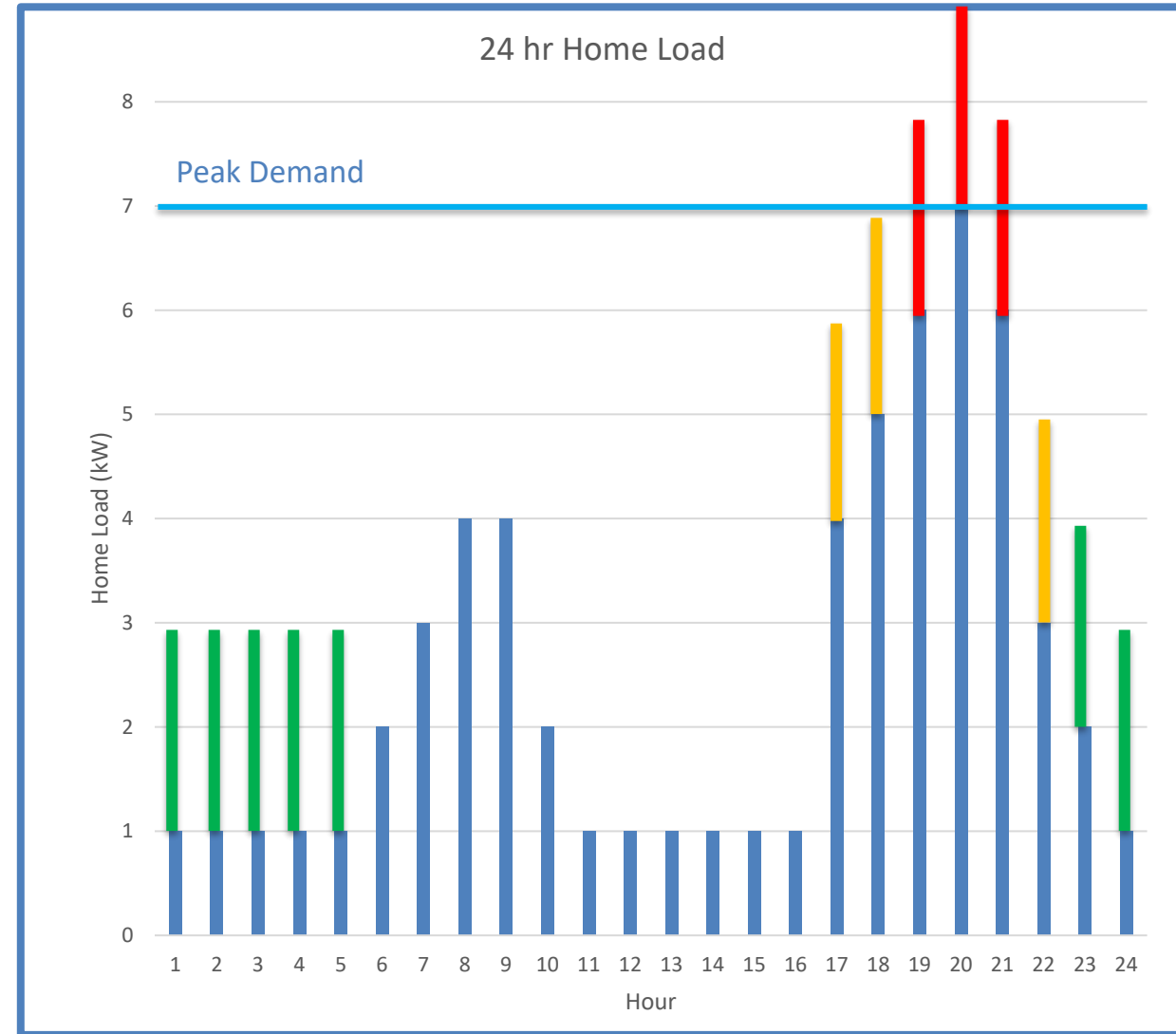
Tiered

- 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)

[driveselectric.gov](https://www.driveselectric.gov) | 27

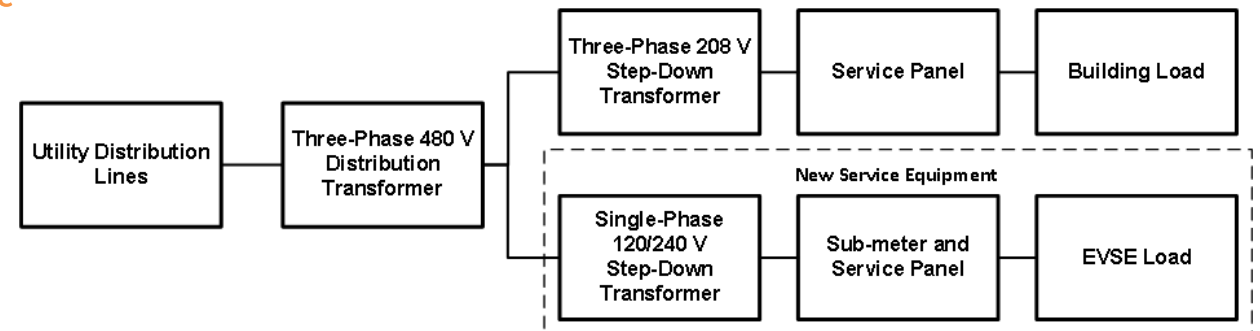
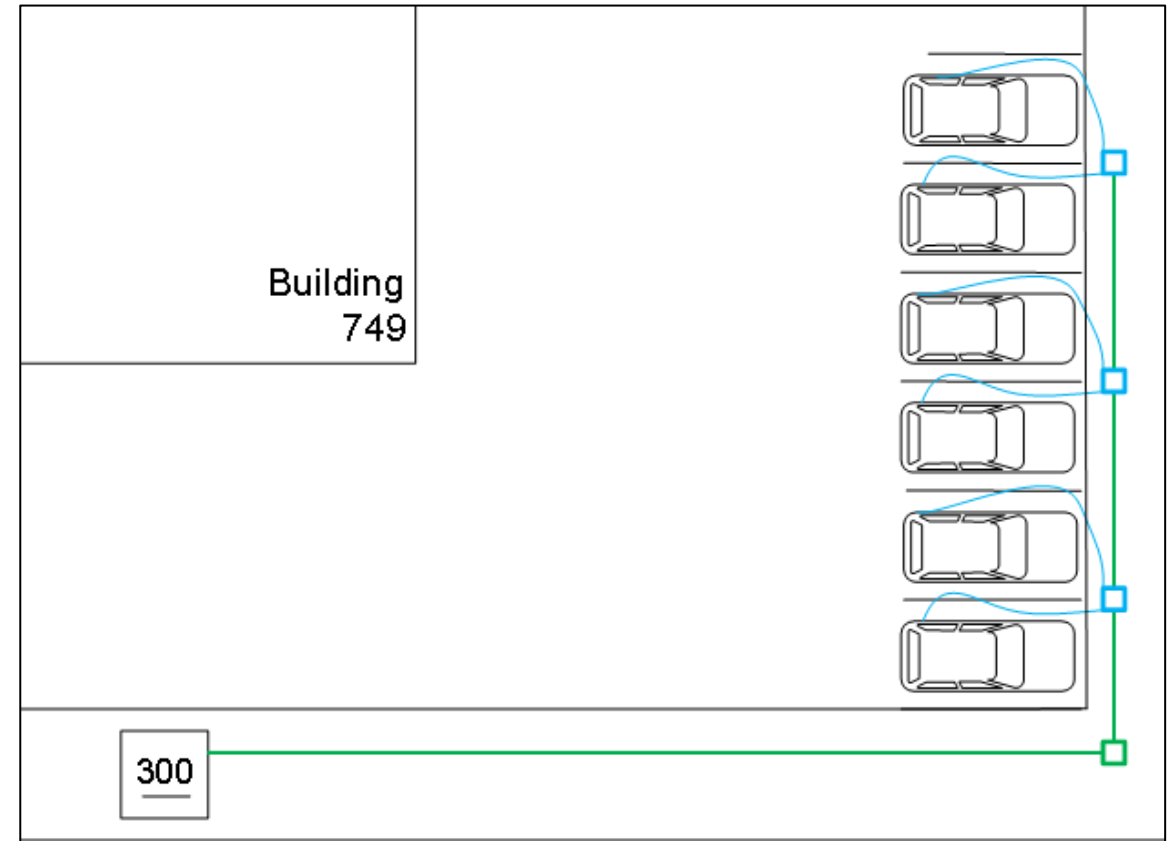
Demand Charges

- The **highest load** (in kW) at a facility throughout a billing period determines the peak load.
- Monthly demand charges are determined by the **facility peak** (including building and EV loads).
- Charging an EV at the same time as the building peak load will increase **demand charges**.
- Long EV **dwell periods** enable charging to mitigate peak load.
- **Dwell Period**
- **Ideal Charging Time**



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.



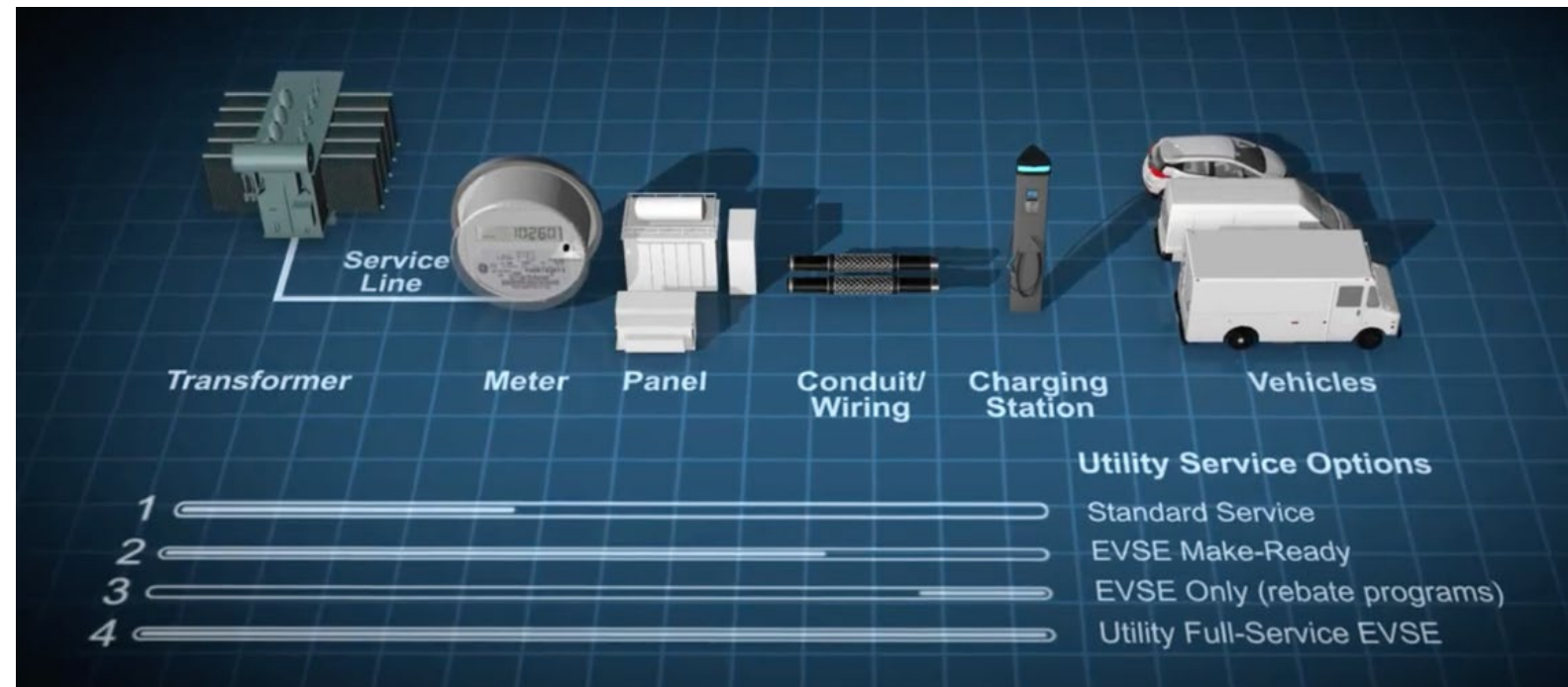
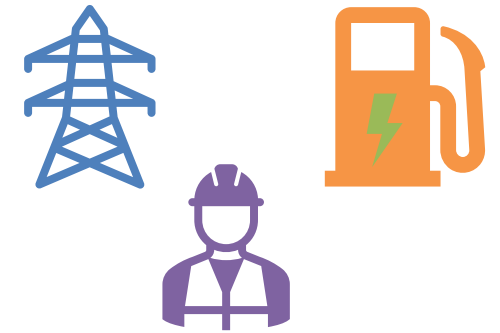
Utility Interconnection

If a new utility service is being requested, or an upgrade to an existing service is required reach out to your utility about their interconnection process.



Utilities offer multiple interconnection service options that include the installation and support for electric service equipment.

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



Discussion Topics

- Interconnection Process
- 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.
- If interconnection upgrades are needed, consider managed charging to mitigate these costs.





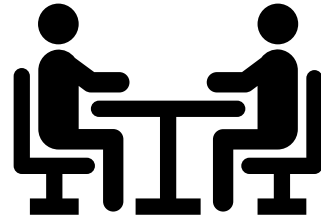
Preparing to Work with Your Utility

Answers Needed From Your Utility

What are your rates?

What incentives do they offer?

Smart charging solutions an option?



Can they meet your power requirements?

Do you need a new service?

Do you need utility side upgrades?

Initial Contact With the Utility



Do you understand your rates?

- What is your energy charge (\$/kWh)?
- Are you subject to demand charges (\$/kW)?
- Are you subject to time-of-use or other charges?



What incentives, rebates, or other programs does the utility offer?

- Is there funding available?
- Are there onsite assessments/assistance available?



Do you pass the laugh test?

- Can they supply power to your desired number of buses?
- Could they potentially supply power to a fully electrified fleet?

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

<https://driveelectric.gov/files/esb-station-planning-form.xlsx>

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 \times 50\text{kW} \times \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

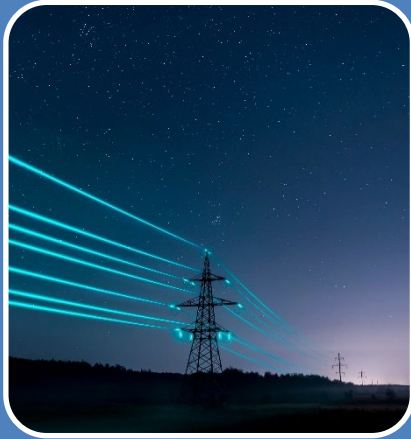
For more details see "EEI Database" worksheet

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/>

Secondary Contact With the Utility



Can the utility meet your power requirements?

- Immediate power needs?
- Long-term needs?



Are smart charging solutions an option?

- Are you interested in V2G or managed charging grid services?
- Is upgrade mitigation an option to reduce cost?

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

Power Requirements

Bus efficiency (kWh/mile)
Route distance (miles)
Dwell time (hours)
Energy (kWh)
Power (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

Onsite Coordination With the Utility



Do you need a new service?

- Service wire, distribution transformer, etc.
- What are the costs? What is the timeline?



Will you need utility side upgrades?

- Main feeder line, substations, etc.
- What are the costs? What is the timeline?

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)

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

STEP 1 UTILITY CONTACT AND INFO

Utility Name Utility Point of Contact Name Email Phone Number Customer Account Number

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 2	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 3	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)	

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 Session (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?	
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?	

For assistance, please contact CleanSchoolBusIA@nrel.gov



Joint Office of
**Energy and
Transportation**

Thank you

Oct. 12, 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 SAM.gov



3. Complete your Application Form and Supplemental Applicant Forms



4. Submit Application Package by January 31st, 2024 at 4:00pm ET

Upcoming Webinars

October 17, 2023	Panel Discussion: Selectee and Utility with Q&A
November 2, 2023	JOET: Fleet Planning & Route Analysis with Q&A
November 14, 2023	Panel Discussion: Transportation Directors with Q&A
December 5, 2023	IRS/Treasury: Tax Credits Overview
December 13, 2023	OIG: Fraud Prevention & Best Practices with Q&A
January 10, 2024	Popular Q&A with Extended Q&A Session
January 24, 2024	CSB Outreach: Topic TBD
February 7, 2024	2023 Rebates Feedback and Next Steps

**Please note: Webinar topics are subject to change. To view the most up-to-date list of CSB webinars and register, please visit: www.epa.gov/cleanschoolbus/events-related-clean-school-bus-program*



Application packages must be submitted to EPA no later than 1/31/24 at 4:00 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.



2023 CSB Rebates

- Applications must be submitted to EPA no later than **1/31/24 at 4:00 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 grant program in Spring 2024.

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

- Learn more about the 2023 CSB Rebates at epa.gov/cleanschoolbus/school-bus-rebates-clean-school-bus-program
- 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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cleanschoolbus@epa.gov

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