

AN INTRODUCTION TO ELECTRIC SCHOOL BUSES AND FUNDING OPPORTUNITIES

October 11, 2024



MOMS
clean air
FORCE



Mothers
& Others
FOR CLEAN AIR



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MAGGIE DOLAN, EPA

**EPA Clean School Bus
Program**



EPA CLEAN SCHOOL BUS

**2023 Clean School Bus Rebate Program
January 18, 2024 @ 10 AM ET**

**Region 4: Florida
U.S. Environmental Protection Agency**

Clean School Bus (CSB) Program: Ethics Disclaimer

This presentation aims to provide information related to the Clean School Bus Program. EPA does not endorse any specific companies, products, or organizations by allowing external parties to present at Clean School Bus Program events. The presenters at this event are not intended to be a comprehensive list of companies or products related to the Clean School Bus Program.

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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 this year. This is the fourth CSB funding opportunity.



**EPA CLEAN
SCHOOL BUS**

- Nationally, EPA has awarded \$1.8 billion in rebates to replace over 6,000 school buses.
- In 2023, EPA awarded Region 4 \$130 million in rebates from 65 school districts to fund 482 buses.
- Many schools have received a positive response from students, drivers, parents and faculty about use of their awarded bus(es), with some selectees indicating plans to acquire additional CSBs.

State	# Counties	Amount Awarded	# Buses to be replaced
Alabama	8	\$16.5 million	49
Florida	5	\$26.9 million	88
Georgia	11	\$28.3 million	160
Kentucky	7	\$6.4 million	24
Mississippi	3	\$10.4 million	30
North Carolina	14	\$19.3 million	59
South Carolina	8	\$9.3 million	27
Tennessee	9	\$12.4 million	45

Counties served by individual application

- Nationally, EPA has awarded \$965 million in grants to replace over 2,700 school buses.
- Of this, \$172 million dollars was awarded to states in the southeast. Over 500 school buses are to be replaced in 34 school districts.

State	# Counties	Amount Awarded	# Buses to be replaced
Alabama	1	\$5.9 million	15
Florida	4	\$33.2 million	105
Georgia	5	\$57.3 million	165
Kentucky	1	\$6.9 million	17

Counties served by third parties

State	# Counties	Total Amount Awarded	Total number of buses to be replaced by third parties
Tennessee	2	\$51.4 million	158
Mississippi	1		
North Carolina	14		
Georgia	2		
Florida	2		

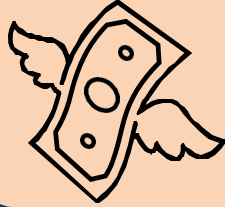
2024 CSB Rebate Program Details



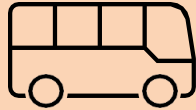
*Application packages must be submitted to EPA no later than 1/31/24 at 11:59 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.*



2024 CSB Rebate Program Overview



The EPA is offering up to \$965 million for clean school buses and ZE school buses. The 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.



The EPA is prioritizing applications that will replace buses serving high-need local education agencies, Tribal school districts funded by the Bureau of Indian Education 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.



Changes from 2023 CSB Rebate Program:
Increased bus maximum (50 buses) and decreased funding per bus.

Eligible Applicants

Who can apply?



State and local governmental entities responsible for: providing bus service to one or more public school systems; or the purchase, lease, license, or contract for service of school buses



Public charter school districts responsible for the purchase, lease, license, or contract for service of school buses



Indian Tribes, Tribal Organizations, or tribally controlled schools responsible for: providing bus service to one or more Bureau-funded schools; or the purchase, lease, license, or contract for service of school buses



Nonprofit School Transportation Associations



Eligible Contractors (OEMs, dealers, private school bus fleets, etc.)



Application packages must be submitted to EPA no later than 1/9/25 at 4:00 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.



**EPA CLEAN
SCHOOL BUS**

Prioritization Criteria

2024 CSB Rebates*

Please note that program criteria may be different from prior CSB funding opportunities and are subject to change in future rounds of CSB funding

Applications due Jan. 9, 2025.
www.epa.gov/cleanschoolbus

HIGH-NEED SCHOOL DISTRICTS AND LOW-INCOME AREAS

- School districts listed in the Small Area Income and Poverty Estimates (SAIPE) School District Estimates for 2022 as having **20% or more students living in poverty**.
- School districts located in the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.
- **Title I-funded public school districts and charter school districts not listed in the SAIPE data.***
- **Title I-funded large public school districts (more than 35,000 students and/or more than 45 public schools) that do not meet the 20% SAIPE threshold may be eligible to self-certify.***

RURAL

- School districts identified with **locale code “43-Rural: Remote”** by the National Center for Education Statistics (NCES).

BUREAU OF INDIAN EDUCATION FUNDED SCHOOL DISTRICTS

SCHOOL DISTRICTS THAT RECEIVE BASIC SUPPORT PAYMENTS FOR CHILDREN WHO RESIDE ON INDIAN LAND

**See the Prioritization Self-Certification Instructions, which can be found on the [CSB Rebates webpage](#), for more information on this option.*



Bus & Infrastructure Funding (Amount per Bus)

Prioritization Status	Replacement Bus Fuel Type					
	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 \$325,000 (Bus + Charging Infrastructure)	Up to \$245,000 (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 \$170,000 (Bus + Charging Infrastructure)	Up to \$115,000 (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 1/9/25 at 4:00 p.m. ET.

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

IRS Tax Credits


- Selectees may be **eligible for Inflation Reduction Act (IRA) tax credits applicable to their bus and infrastructure purchases**, mainly the:



EPA cannot give tax advice. Refer to guidance on the IRS website for further instruction.


- **Commercial Clean Vehicle Credit**, which provides up to \$40,000 for qualified commercial clean vehicles; and the
- **Alternative Fuel Vehicle Refueling Property Credit**, which provides up to \$100,000 for qualified charging and refueling infrastructure.
- Selectees may also be eligible to claim all or a portion of the value of IRA credits using either the new elective pay, and transferability mechanisms introduced by the IRS.
- See the [Internal Revenue Service \(IRS\) website](#) for more information on these credits.
- **Please review the IRS' guidance linked above for more information about your eligibility for this credit, as well as when you may be able to receive the credit.**

Other information



Eligibility information for existing school buses, new school buses, and infrastructure can be found in the Program Guide. We highly recommend reviewing the guide to understand these eligibility requirements.

Build America, Buy America



Certain infrastructure projects are subject to BABA provisions of the Bipartisan Infrastructure Law (BIL).

- These require that all the iron, steel, manufactured products and construction materials used in federal infrastructure projects are produced in the U.S.
- This includes, but not limited to: the EV charger, all wiring or fixtures to support the charging equipment, breaker panels or subpanel, conduit from the meter to the panel.

- School buses are **NOT** subject to BABA requirements.
- Electric Chargers (EVSE) and supporting equipment **ARE** subject to BABA
 - Due to anticipated payment processing timeframes for this funding opportunity,

How to Apply — Overview



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 9th , 2025 at 4:00pm ET

What you'll need: *Details and Supplemental Forms*

School Board Awareness Certification

- **All applicants** must submit a School Board Awareness Certification to verify the school board's awareness of the school district's rebate application. It is imperative that the school board is aware of the application as they will likely have to vote on the approval of the project if the school district is selected for a rebate.

School District Approval Certification

- **Third Party applicants** (eligible contractors and nonprofit school transportation associations) applying for rebates must submit a signed School District Approval Certification to verify the school district's approval of the third party's rebate application for new buses that would serve their school district.

Utility Partnership Agreement

- **Applicants applying for ZE school buses** must also submit a Utility Partnership Agreement to verify the electric utility provider's awareness of the school district's rebate application. Coordination and communication between the school district and the local utility(ies) is critical to initiate early and to continue throughout the project.

Information needed: **applicant type, school district, business contacts for your organization, data for the existing buses to be replaced, data for the new replacement buses.** For more information about that, please see Section 3 of the Program Guide.



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.



Workforce Development and Job Quality

Workforce planning and preparation are critically important elements of successful clean school bus deployment.

Workforce planning should focus on:

- ✓ **All workers associated with the project**, including current drivers, mechanics, electricians, bus monitors, and other essential personnel.
- ✓ **Safe operation and maintenance of new buses and infrastructure** for students and workers.
- ✓ **Job quality for workers** and adequate support during the transition, including worker voice and representation throughout the process (e.g., current workers are not replaced or displaced from new buses, workers are compensated their wages for time spent in training, etc.).

*Note: It is a **requirement** that all electricians installing, maintaining, or operating infrastructure are certified by the **Electric Vehicle Infrastructure Training Program**.

Costs associated with workforce development are an eligible use of program funds.



Resources



*Application packages must be submitted to EPA no later than 1/9/25 at 4:00 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.*



**EPA CLEAN
SCHOOL BUS**

CSB Program Website Tools and Resources



Technical Assistance

- ➔ [Clean School Bus Technical Assistance](#)
- ➔ [Coordinating with Electric Utilities](#)
- ➔ [Clean School Bus Case Studies](#)
- ➔ [Tax Credits](#)



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](#)
- ➔ [Resources to Engage Your Community](#)

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

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)

EPA Coordination with the Joint Office of Energy and Transportation

Coordinating with
electric utilities

Identifying
available funding
and incentives

Analyzing
charging
infrastructure
needs

Conducting a
route analysis and
planning routes

Training and
workforce
development

Resiliency (V2X)

Analyzing energy
needs and grid
impact

Identifying solar
and battery
storage
opportunities

Information for NREL Planning Grants: driveelectric.gov/clean-bus-planning-awards

Register for the EPA/JOET Webinars: [Clean School Bus Webinars | US EPA](#)

Online forum for fleet staff: <https://electric-school-bus-forum.nrel.gov/>



Application packages must be submitted to EPA no later than 1/9/25 at 4:00 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.



Selection and Notification



- In accordance with the CSB statute, financial assistance will be distributed equally between two funding pools, Zero Emission and Clean School Bus pool.
 - The EPA currently expect that at least 60% of funding from each pool will be awarded to prioritized school districts.
- Applications received by the deadline that meet threshold eligibility criteria will be placed in a single ordered list using a **random number generator lottery process**.
 - This funding opportunity is not first-come, first-served, but the EPA recommends applying well in advance of the deadline.
- The EPA will select applicants for funding, working from the top to the bottom of the random number order list, until funds are allocated from both the Clean School Bus and Zero Emission pools of funding.
- To ensure a broad geographic distribution of funds, the **EPA will select at least one application per state, or territory** provided there is at least one eligible application.
- Applicants not selected by lottery will remain in random number order on a waitlist up to 90 days after the initial selection notification.

Selectee Requirements – Close Out Form

Once selectees have received their new buses and eligible infrastructure and have replaced their existing buses, they must submit an online Close Out Form. The **Close Out Form** must be submitted by **May 2027**.

The Close Out Form will require selectees to attach:



- For existing buses being scrapped: scrappage photos and letter for buses being replaced
- For existing buses eligible to be sold or donated: documentation of the vehicle sale or donation
- A scan of the invoices for the new buses and eligible infrastructure
- A scan of proof of delivery for the new buses and eligible infrastructure (e.g., dated bill of lading)
- One photo of the exterior of each new bus, labeled with the last 4 digits of the bus VIN
- One photo of each charging pedestal if EPA funds were used for charging infrastructure

Selectees must retain all financial records, supporting documents¹, accounting books and other evidence of Rebate Program activities for five years after delivery of the new buses. If any litigation, claim, or audit is started before the expiration of the five-year period, the recipient must maintain all appropriate records until these actions are completed and all issues resolved. The EPA reserves the right to request copies of documentation, such as bus activity logs, to verify submitted information.

¹ This includes retaining all BABA-related documents (e.g. manufacturer certification letters) demonstrating compliance for products received at the site.

Important Dates

September 26, 2024	2024 Rebate Program Opens
October – December 2024	Various Webinars on CSB Program <i>More information can be found on the epa.gov/cleanschoolbus website under the ‘Webinars’ section.</i>
November 14, 2024 by 4:00 pm (ET)	Final Date to Submit Questions <i>Questions submitted after 11/14 may not receive a response before the application deadline.</i>
January 9, 2025 by 4:00 pm (ET)	Application Deadline
Spring 2025	Anticipated Notification of Selection
June– November 2025	Selectees submit Payment Request Forms with purchase orders
May 2027	Anticipated Project Period Deadline



Application packages must be submitted to EPA no later than 1/9/25 at 4:00 p.m. ET.
For more information, please visit www.epa.gov/cleanschoolbus.



**EPA CLEAN
SCHOOL BUS**



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**EPA CLEAN
SCHOOL BUS**

cleanschoolbus@epa.gov
epa.gov/cleanschoolbus



TANYA COVENTRY- STRADER, MOCA

**Health Impacts of Electric
School Buses**

Clearing the Air:

Student's Health and Diesel Pollution

Tanya Coventry-Strader


tanya@mothersandothersforcleanair.org



WHO ARE MOTHERS AND OTHERS FOR CLEAN AIR?

Mothers and Others for Clean Air protect children's health by educating the public about the health impacts of air pollution and advocating for climate action and environmental justice.

Our Work

- **Education:** We educate healthcare professionals about the intersection of healthcare and air pollution using science-based research.
 - **Advocacy:** We train nurses and doctors to advocate for system change to protect children's health from the impact of air pollution and climate change.
 - **Collaboration:** We connect healthcare, education and communities and encourage collective action to stop climate change.
- 

KEY POINTS

- Diesel emissions (traffic-related air pollution) harms health.
- Children and teens are still growing and their bodies and organs are still developing. As teens, every organ has almost as much of a growth spurt as their bones.
- Air Pollution affects all of us in multiple ways: lungs, brain, heart, school performance, mental health.
- Tackling exposures creates almost immediate health benefits.



THE STORY OF ELLA KISSE DEBRAH

Ella lived in South London in an area with many roadways. She was a healthy energetic girl who suddenly got severe asthma when she was 7 years old. Almost 3 years and 30 emergency hospital admissions later, Ella passed away.



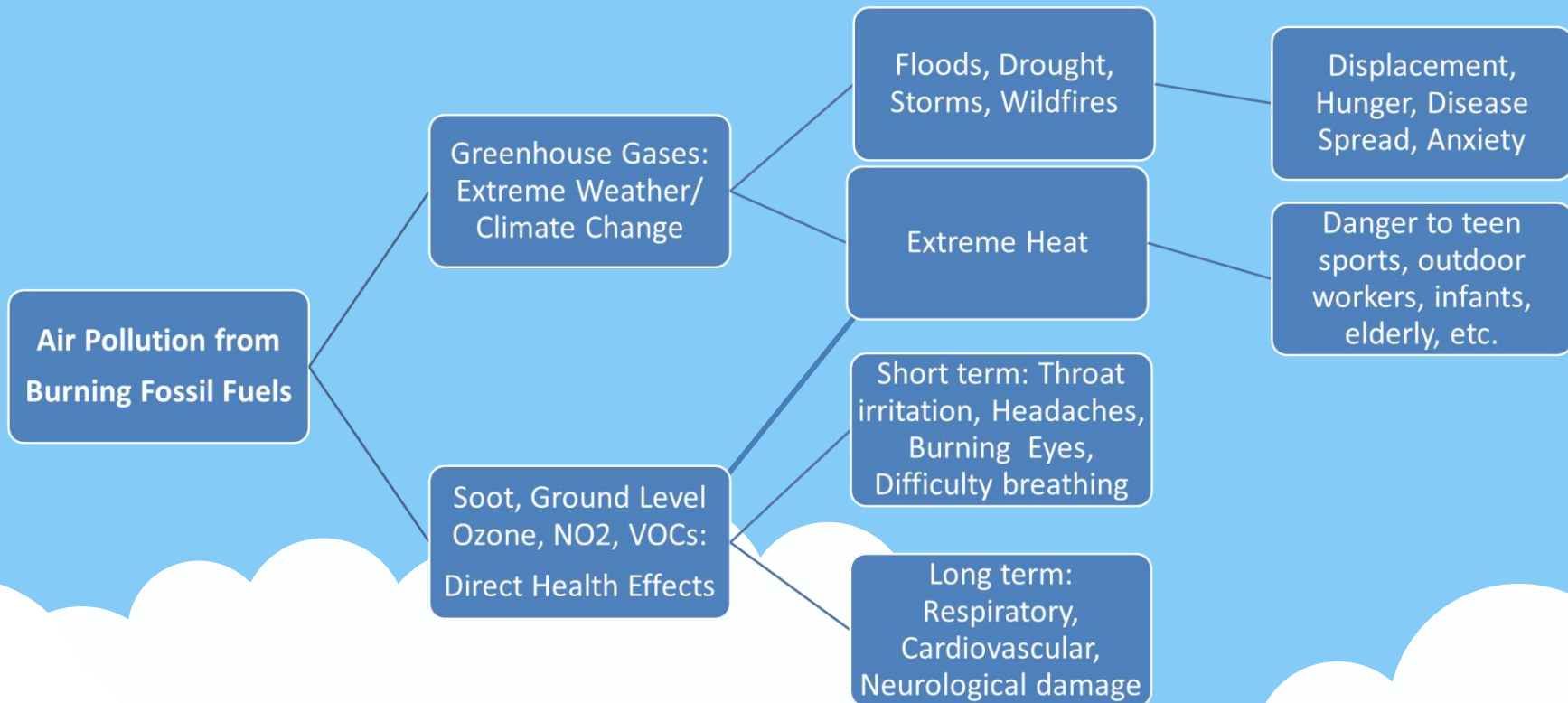
The coroner who completed her death certificate hired a medical expert to look at Ella's medical problems.

The medical expert noted that all her times in the hospital were at the same time as air pollution spikes.

Ella was the first person to have air pollution as a cause of death on their death certificate.

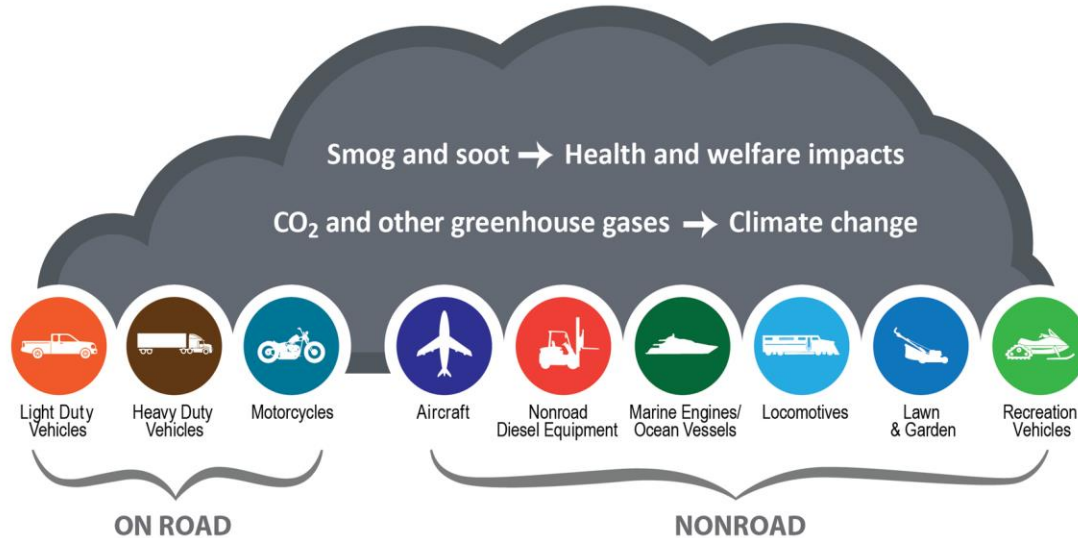
<https://www.ellaroberta.org/about-ella>

WHY IS IT IMPORTANT TO TALK ABOUT HEALTH IN THE CONTEXT OF AIR POLLUTION?



HOW ARE WE EXPOSED TO DIESEL EXHAUST?

Sources of Transportation Air Pollution



WHAT IS IN DIESEL EXHAUST?

Diesel exhaust contains many pollutants that damage our health, including more than 40 known carcinogens.

Some of them are greenhouse gases, and Nitrogen Oxides and VOCs react with each other and oxygen in the presence of heat and sunlight to create ground level ozone.

PM2.5 particles (also called soot) can be inhaled deep into the lungs. Some are so small they can go from the lungs into our blood.



<https://gispub.epa.gov/neireport/2017/>
<https://www.eia.gov/tools/faqs/faq.php?id=307&t=10>
<https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts-heavy-metals>: <https://doi.org/10.1007/s11356-019-06144-4>

Communities of Color Bear Unfair Burden

Climate Environment Weather Climate Solutions Climate Lab Green Living Business of Climate

CLIMATE & ENVIRONMENT

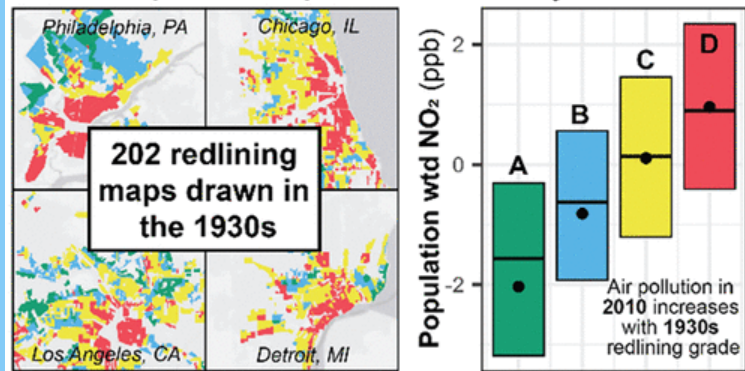
Block-by-block data shows pollution's stark toll on people of color

Mobile air quality monitoring in San Francisco and Oakland challenges the accuracy of stationary monitoring sites across the country

2022: Used Mobile Monitors in San Francisco, Oakland, San Jose, other SF Bay cities:

- Communities of Color have up to 55% more exposure to NO₂ than White communities.
- Air Pollution can vary 800% at different ends of the same block.

Modern air pollution disparities in historically redlined areas



- Measured in areas based on 1930's redlining maps
- Structural racism still affecting communities of color 80 years later

Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities. Lane, et al. Environ. Sci. Technol. Lett. 2022. <https://doi.org/10.1021/acs.estlett.1c01012>

<https://www.washingtonpost.com/climate-environment/2022/05/25/aclima-bay-area-pollution-racism/>

HOW ARE KIDS EXPOSED TO DIESEL EXHAUST INSIDE SCHOOLBUSES?

Diesel exhaust comes from the tailpipe and from the engine crankcase.

In school buses, measurements inside the bus show exposure to **4 to 15 x** the level of exhaust as riding in a car in front of the bus. It leaks from the engine and the tailpipe and is sucked into the cabin.



<https://ww2.arb.ca.gov/resources/documents/selected-references-childrens-school-bus-exposure-and-mitigation-studies>

https://www.edf.org/sites/default/files/5342_School_bus_pollution_studies.pdf

WHAT DOES AIR POLLUTION DO TO CHILDREN'S HEALTH?



Low Birthweight
Premature Birth
Brain Development

Asthma
Asthma Attacks
Damaged Lung Growth
High Blood Pressure

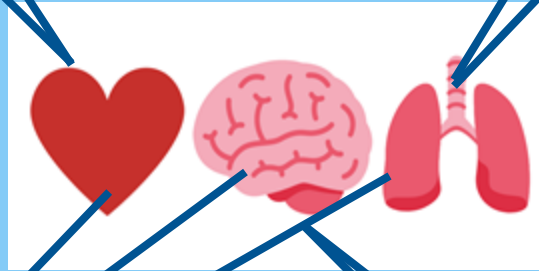


Lower School Test Scores
Lower Exercise Ability
More Behavior Problems
Mental Stress
Lower Attendance

AIR POLLUTION AND ADULT HEALTH- IT STARTS YOUNG AND KEEPS GOING

Heart Disease
Heart Attacks
Heart Failure
8% of all Heart
Disease Deaths

Asthma Attacks
Emphysema
COPD
Pneumonia
Viral infections



High Blood
Pressure
Diabetes
Kidney Damage
Other cancers

Strokes
Dementia
More Use of Mental
Health Care

SCHOOL BUS EXHAUST IN GEORGIA



- Research from Georgia State University on all counties here in Georgia
- Studied % of school buses in a district that were retrofitted with a filter and the effects on the FitnessGram and test scores

Retrofitting 100% of a fleet:

- 4% increase in average aerobic capacity for the district - think how much lung damage that is
- Improved English scores
- Improved Math scores some but variable



Austin, Heutel, Kreisman.

Study: <https://doi.org/10.1016/j.econedurev.2019.03.002>

News: <https://www.bizjournals.com/atlanta/news/2019/05/22/georgia-state-researchers-find-school-bus.html>

DO SCHOOLS NEAR HIGHWAYS AFFECT STUDENTS?

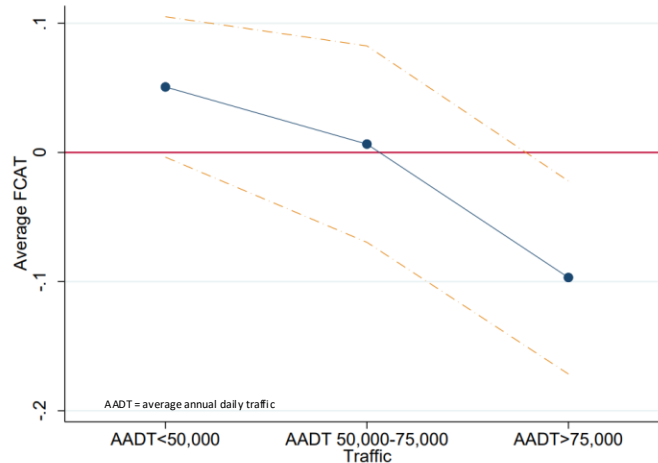
A study in Florida of children who moved from elementary to middle school or middle to high school found that:

- If the new school was downwind of a major highway, students had decreased test scores, more absences, and more behavior problems.
- The effect on test scores was stronger for higher volume highways.

Journal of Human Resources: <https://doi.org/10.3368/jhr.57.3.1218-9903R2>



Figure 5: Effects of being downwind 60% of the time by traffic



DO CLEANER SCHOOL BUSES AFFECT STUDENT PERFORMANCE?

2012-2016:

School Districts that used EPA School Bus Rebates to replace the oldest buses (1990 and earlier)

- Reading and Language Arts Scores increased 0.06 standard deviation
- Math Scores increased 0.025 standard deviation
- Replacement of the oldest school buses was associated with improved educational performance.
- <https://doi.org/10.1001/jamanetworkopen.2024.3121>



THERE IS HOPE!



- Interventions like clean school buses to reduce air pollution make a real difference in health and educational outcomes
- We are making strides in cutting the levels of diesel pollution in the southeast.
- It is going to take education and collective action to change the systems that got us here, but we can do it.
- There is a day in the not-so-distant future when children like this will be lining up to get on clean school buses where they can breathe easy.

Thank you.

Tanya Coventry-Strader
Executive Director, Mothers and Others for Clean Air



Sign up for our campaign
newsletter



**PAUL S. D'ANDRADE,
FAIRFAX COUNTY
PUBLIC SCHOOLS**

School District Story



FAIRFAX COUNTY PUBLIC SCHOOLS VIRGINIA

SCHOOL BUS FLEET CONVERSION
CHALLENGES AND RECOMMENDATIONS

BACKGROUND

- 1,625 school buses; 896 cars, vans, and trucks
- Joint Environmental Task Force goal to convert the school bus fleet by 2035
- FCPS OTS committed to meeting goal
- 2024-2025 SY, 28 electric school buses; 23 electric support vehicles
- By end of 2024-2025 SY, 73 electric school buses



WHY ELECTRIC SCHOOL BUSES?

- Environmental responsibility
- Cost savings
- Health benefits



GRANT OPPORTUNITIES

- **Dominion Energy** - 8 electric school buses and 4 V2G charging stations
- **Department of Environmental Quality (DEQ)** - 20 electric buses (1 to 1 V2G charging stations)
- **Clean School Bus Program** - 42 electric buses



GETTING EVERYONE ONBOARD

- Driver training and communication
- Partnerships with utility providers, vendors, and third-party providers
- Keeping leadership informed with plans and funding requirements for transition to a fully ESB fleet



PLANNING AND IMPLEMENTATION

- Infrastructure
- Parking - 3 depots; 140 park outs
- Funding- Explore grant opportunities; increase budgetary funding, if possible



PROGRAM EVALUATION AND MEASURABLES

- Establish Key Performance Indicators
- Work with vendors and manufacturers
- Use data to guide decisions
- Share data and challenges with stakeholders





THANK YOU!



PSDANDRADE@FCPS.EDU



[HTTP://WWW.CONTOSO.COM/](http://www.contoso.com/)



RON CHAFFIN, PUTNAM COUNTY SCHOOL SYSTEM

School District Story



**CHRISTINA ZABALA,
FPL**

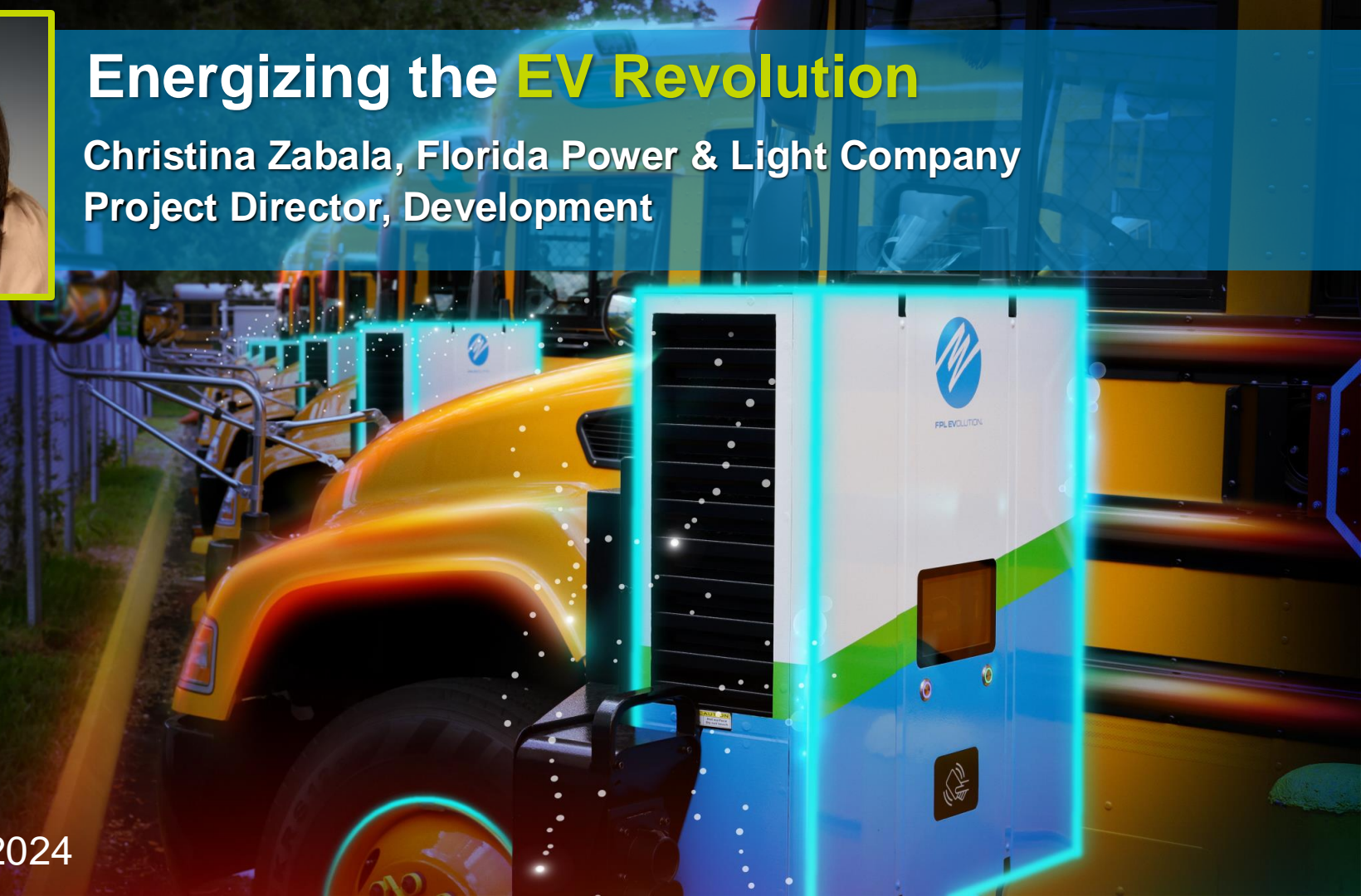
Utility Engagement



Energizing the **EV Revolution**

Christina Zabala, Florida Power & Light Company
Project Director, Development

October 2024



School bus electrification is complex. We can help.

Speak with
your
**Customer
Advisor**

Learn about
**EV programs
and electric
rates**

Understand
Site-Specific
**New
Service
Upgrades**



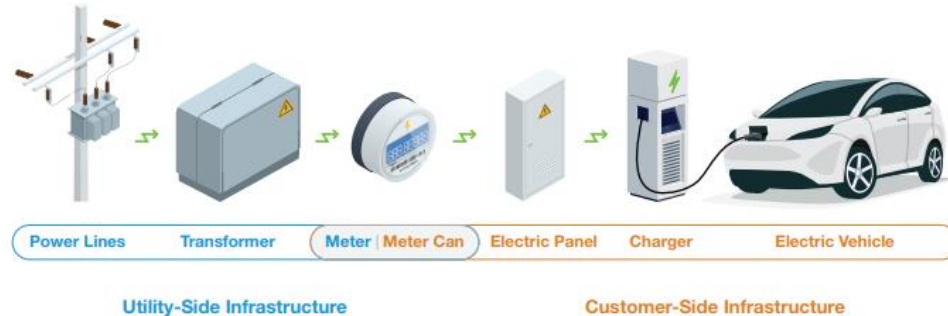
Communicate with your electric utility

- ▶ **Contact your customer advisor or utility representative early and often**
 - » Most electric utilities have an assigned account representative for school districts and government accounts
- ▶ **Share your short- and long-term plans and ask for help identifying utility stakeholders to discuss site specific options**
- ▶ **If applying for a grant or rebate, obtain a letter of recommendation and/or letter of intent**
- ▶ **Ask what electric rates apply and see if someone can assist with electric bill impact analysis**
- ▶ **Inquire about EV charging offerings**



Determine charging and power requirements

- ▶ Common utility upgrades to serve charging infrastructure for electric buses include a new pole, transformer, upgrade from single-phase to three-phase power
- ▶ Open a new service application and share pertinent information on your EV plans
 - » Number of chargers, type of charger, power output (kW)
 - » Upload documents, if available, to include panel schedule, one-line diagram, charger specifications
 - » Include addresses or account numbers, if available, on similar projects you have installed
- ▶ A service planner will assess capacity to power your new EV chargers, share a preliminary design of utility drawings, and let you know if you need to obtain any necessary easements or permits



Understand construction and installation requirements

- ▶ **Construction timelines vary by site design**
 - » Transformer and utility equipment lead times vary but often range from 8 – 12 months from final design
- ▶ **Submit necessary forms, agreements and payments**
 - » Executed easements and/or permits
 - » Contribution in Aid of Construction (CIAC)
- ▶ **Site Construction**
 - » Attend a pre-construction meeting to understand site conditions, accessibility, special requirements and timelines
- ▶ **Service connection**
 - » You will be responsible for scheduling inspections of the electrical panel – contact your utility to coordinate your temporary test inspections
 - » Once inspections are approved, contact your utility to set your new meter and energize the service connection





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WRI'S ELECTRIC SCHOOL BUS INITIATIVE

Tools and Resources

ALICE KWAK – STATE POLICY RESEARCH ANALYST; ALICE.KWAK@WRI.ORG

 WORLD RESOURCES INSTITUTE

ABOUT WRI

WRI is a global research organization with over 1,400 experts working across 60+ countries

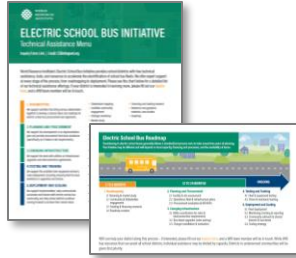


● International Office ● Regional Hub ● Programmatic Office

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RECENT ESB INITIATIVE RESOURCES



Technical assistance & instructional resources for school districts



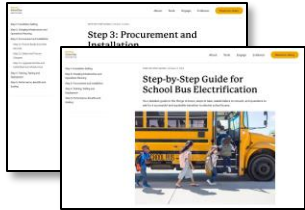
Case studies sharing key learnings, best practices and practical knowledge



Partner-oriented strategic plans and roadmapping assessments



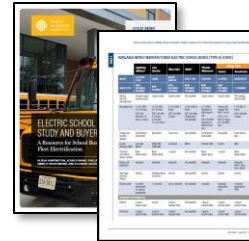
Dataset of U.S. School Bus Depots



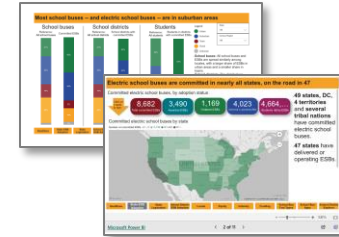
Step-by-step guide for school bus electrification



ESB Initiative Equity Framework and approach to prioritizing equity



Electric school bus US Market Study and Buyer's Guide



Electric School Bus Data Dashboard

RECENT ESB INITIATIVE RESOURCES

WRI: [How to Apply for Clean School Bus Program Funding](#)

WRI: [All About the Clean School Bus Program](#)

WRI: [All About Total Cost of Ownership \(TCO\) for Electric School Buses](#)

WRI: [All About Electric School Bus Tax Credits](#)

- [Federal Electric School Bus Tax Credits 101](#) - webinar slides and recording

WRI: [All About Working with Your Electric Utility](#)

WRI: [Electric School Bus U.S. Market Study and Buyer's Guide: A Resource for School Bus Operators Pursuing Fleet Electrification](#)

WRI: [Electric School Bus Technician Training Database](#)

WRI: [Reskilling the Workforce: Training Needs for Electric School Bus Operators and Maintenance Technicians](#)

WRI: [Electric School Bus Battery Resources](#)

WRI: [School District Stories - Resource Library](#)

WRI: [Electric School Bus Data Dashboard](#)

WRI: [FAQs on Electric School Buses](#)

WRI: [Step-by-step guide for fleet electrification](#)

WRI: [Office Hours - Talk To an Expert](#)

NREL Fleet Advisory Services: [Contact Us: Joint Office Concierge · Joint Office of Energy and Transportation](#) or contact cleanschoolbusta@nrel.gov

The Alliance for Electric School Buses: [Joint Office/NREL Menu of Support on Electric School Buses](#)

HOW TO APPLY FOR CSBP FUNDING

How to Apply for Clean School Bus Program Funding

Applications for Clean School Bus Program funding are now open! Learn more.



Applications for the Clean School Bus Program are now open!

Applications for the Clean School Bus Program are now open! School districts and fleet operators can apply today on the EPA website.

[Apply](#)

With no tailpipe emissions of harmful pollutants that can [cause asthma, health issues](#) and [cognitive development problems](#) in students, electric school buses are the clean ride that every child deserves.

Thanks to the Clean School Bus Program, school districts and fleet operators now have the opportunity to use federal funds to cover up to the full cost of new electric school buses and charging infrastructure.

Applications for Clean School Bus Program funding are now open. Learn more on this page, and apply on [the EPA website](#).

What is the Clean School Bus Program? [+](#)

Who is eligible to apply for Clean School Bus Program funds? [+](#)

How does the rebate program work? [+](#)

How much funding is available through the 2024 Clean School Bus Rebates? [+](#)

What are priority districts? [+](#)

When are Clean School Bus Rebate Program applications due? [+](#)

What do I need to submit when I apply? [+](#)

What does Clean School Bus Program funding cover? [+](#)

How do I get started? [+](#)

What should I consider when applying? [+](#)

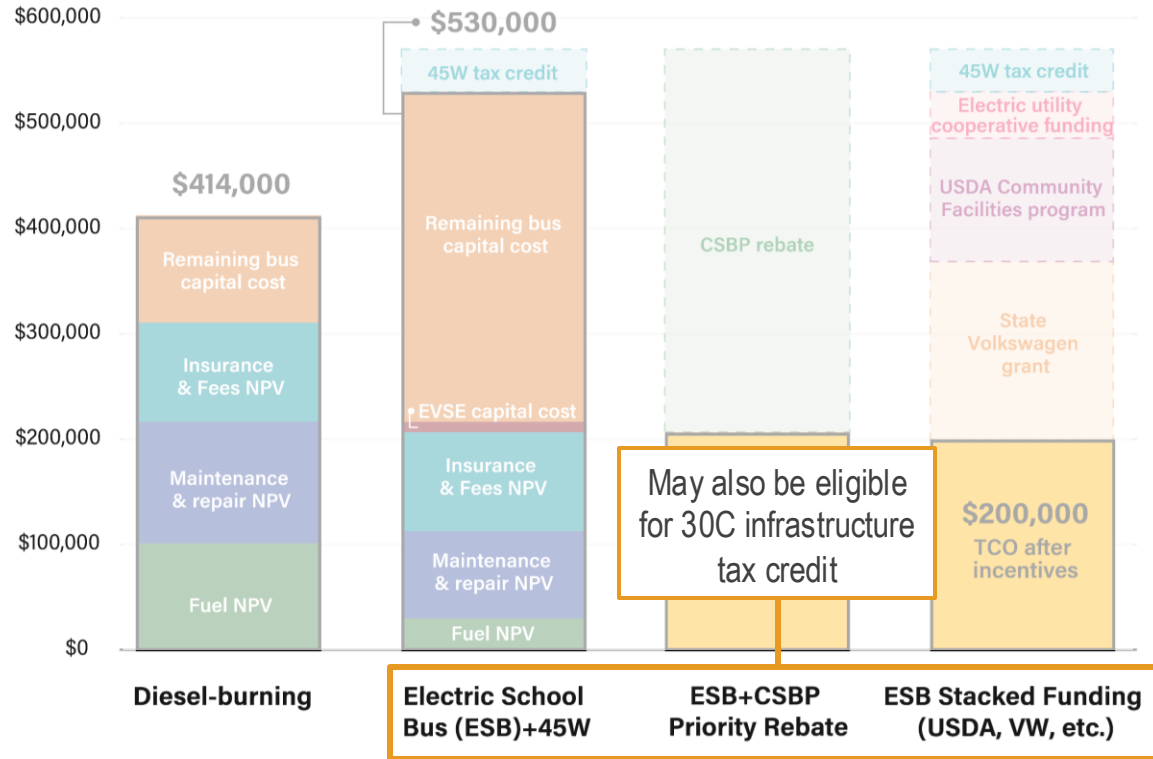
How can I learn more? [+](#)

Why are electric school buses the right choice for my district? [+](#)

What other funding is available for electric school buses? [+](#)

Are propane-burning school buses a clean option? [+](#)

BUS TOTAL COST OF OWNERSHIP (TCO)



After incentives, the TCO for electric school buses can be **hundreds of thousands of dollars less** than the TCO of a diesel-burning school bus.

Source: [WR's Electric School Bus Initiative – All About Total Cost of Ownership for Electric School Buses](#);

Note: NPV = net present value; USDA = U.S. Department of Agriculture; ESB Stacked Funding is illustrative real-world example from Knox County, MO

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THANK YOU!

Email: alice.kwak@wri.org

Q&A