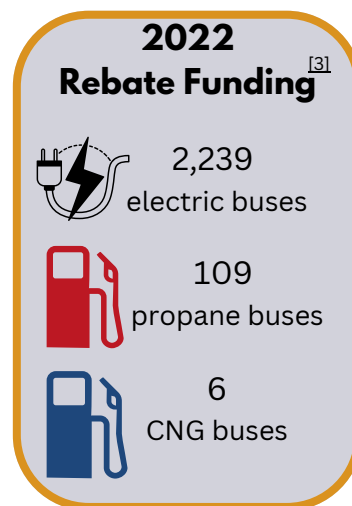


Clean School Bus Program for Wyoming Schools

The U.S. Environmental Protection Agency's (EPA's) Clean School Bus Program provides \$5 billion over five years (2020-2026) to *replace* existing school buses with electric, propane, and compressed natural gas (CNG) buses.^[1] As of 2023, some Wyoming school districts have incorporated propane and CNG buses into their fleets; however, Wyoming is the *only* state without electric school buses.^[2] While the EPA program is competitive, **Wyoming school districts are well suited to be selected** due to our low rate of adoption. The EPA rebate program would help school districts fulfill their obligation to seek outside funding for new buses, per Wyoming Statute §21-13-320(m).



Notice of Funding Opportunity:

The EPA is currently offering \$500 million for its second round of rebates for clean school buses. Applications are due by **January 31, 2024 at 4 p.m ET**.

- Rebates must replace diesel and gasoline school buses with those powered by electric, propane, or compressed natural gas.
- Funds may go towards the purchase of the buses, the installation of electric vehicle charging infrastructure, labor costs, and workforce training.
- The EPA is prioritizing applications in high-need, tribal, and rural schools - including 27 Wyoming school districts.^[4] Non-priority school districts are still eligible to receive major financial assistance, view the chart on the following page.

Benefits of Electric Buses



Funding Assistance

The EPA has both rebates and grants available through its Clean School Bus Program until 2026.



Cost Savings

The town of Havre, Montana reduced their fueling costs by 73% for gas and 41% for diesel, by switching to electric.



Healthier for Children & Drivers

Clean school buses reduce exposure to harmful air quality by 90-100%, which has been shown to improve lung function and decrease hospitalization rates of school children^[5] Electric buses are the best example of this by giving off no exhaust.



Operations & Maintenance

Electric buses have less moving parts than internal combustion engines, which means fewer parts to fix and maintain. Oil changes are no longer necessary and regenerative braking increases longevity of brake pads.

[1] <https://www.epa.gov/cleanschoolbus>

[2] <https://www.wri.org/insights/where-electric-school-buses-us>

[3] <https://www.epa.gov/system/files/documents/2023-02/420r23002.pdf>

[4] <https://www.epa.gov/system/files/documents/2022-05/2022-csb-rebates-prioritized-school-districts-2022-05.pdf>

[5] <https://www.cdc.gov/policy/hi5/cleandiesel/index.html>

2023 Rebate Funding Available

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

Stacking Incentives

Prioritized School District

\$350,000 Estimated electric bus & charging infrastructure costs*

-\$345,000 **EPA electric bus rebate**
Towards electric meter + panel, charging station, bus, battery energy storage, on-site renewable energy

\$5,000 Remaining due

-\$1,500 **Commercial Clean Vehicle Tax Credit**
30% or \$40,000 (whichever is less)
Towards bus costs

\$3,500 Total due

Non-Prioritized School District

\$350,000 Estimated electric bus & charging infrastructure costs*

-\$200,000 **EPA electric bus rebate**
Towards electric meter + panel, charging station, bus, battery energy storage, on-site renewable energy

\$150,000 Remaining due

-\$40,000 **Commercial Clean Vehicle Tax Credit**
30% or \$40,000 (whichever is less)
Towards bus costs

\$110,000 Total due

Schools may also qualify for the \$100,000 Alternative Fuel Infrastructure Tax Credit if they meet the following criteria:

- *The census tract is not an urban area;*
- *A population census tract where the poverty rate is at least 20%; or*
- *Metropolitan and non-metropolitan area census tract where the median family income is less than 80% of the state medium family income level.*

The Wyoming Department of Environmental Quality may also have Volkswagen Settlement funds available which can be used for clean school buses.

*This estimate is based off of what Havre, Montana reported paying for their bus and charging infrastructure. The EPA estimates a cost range of \$300-400k per bus.

Frequently Asked Questions: Electric School Buses

What health benefits come with low- or zero-emission buses?

Emissions from older diesel school buses have been shown to have air toxins and particulate matter which is 4-12x higher than ambient air quality.^[6] Children are particularly susceptible to negative health impacts of diesel emissions, which are linked to asthma, cancer, and other respiratory illnesses.^[7]

How do electric school buses perform in the cold?

Electric buses can operate in extreme cold (-35°F) and at elevation without any issues. Drivers in Tok, Alaska reported an efficiency decrease of 20-25% for every temperature decrease of 30°F. This maxed out around a 55% efficiency decrease at -20°F.^[8] Tok's buses use battery-run heaters; however, manufacturers also make models with auxiliary diesel heaters, which significantly reduce range loss in cold weather.

Can electric school buses be charged outside in the winter?

Some bus manufacturers equip their buses with battery thermal management systems that enable their buses to be charged outdoors in the winter, while others may require that buses be charged indoors. Check with the bus manufacturer to pick the right bus for your needs.

Who manufactures electric school buses?

Legacy school bus manufacturers like Blue Bird and Thomas Built Buses offer electric options. Lion Electric, another bus manufacturer established in 2008, has gained popularity in northern latitudes due to their performance in cold weather.

What is the range of electric school buses?

Blue Bird, Lion Electric, and Thomas Built Buses, offer buses which vary between 100 and 155 miles of expected range.

What infrastructure is needed to charge electric school buses?

Level 2 chargers that use 208-240 volts can charge electric buses in 6-8 hours. Current infrastructure might be able to accommodate this added electrical demand; however, always check with your electricity provider to determine if any electrical upgrades are needed.

How do you maintain an electric school bus?

Electric vehicles can be maintained by school district's mechanics. Bus manufacturers often provide safety and user trainings for their buses and charging infrastructure. The EPA Clean School Bus Program funding can also be used for workforce training. Kremmling, Colorado reported saving nearly \$1,800 in maintenance costs with their electric bus, in their first year.^[9]

[6] <https://www.sciencedirect.com/science/article/abs/pii/S0167629611000701>

[7] <https://www.cdc.gov/policy/hi5/cleandiesel/index.html>

[8] <https://www.epa.gov/system/files/documents/2023-04/elec-schl-bus-cold-weather-consider-2023-04-19.pdf>

[9] <https://www.accelerazero.com/news/snowy-colorado-mountain-towns-electric-bus-experience>

What other comparable communities have adopted electric school buses?

Over 400 school districts have received EPA (and other) funding for alternative fuel buses. Comparable towns in the West include: Vernal, UT; McCall, ID; Havre, MT; East Helena, MT; Bigfork, MT; Billings, MT; Tok, AK; Lower Brule, SD; West Fargo, ND; and Kremmling, CO.

Why are electric buses being prioritized over propane or CNG in the EPA funding?

In the EPA's first round of funding, they awarded 95% of rebates to electric over other alternative fuel sources, which suggests they are prioritizing applications for electric. Both propane and CNG school buses are in use at school districts in Rock Springs and Pinedale respectively. If Wyoming schools are interested in these case studies, they can reach out to the school districts directly.

What other funding sources are available for alternative fuel buses?

The EPA also has a Clean School Bus Grant that typically opens in the spring of each year. The grant application process is more robust compared to the rebate, and is geared towards replacing larger fleets. The Wyoming Department of Environmental Quality has another pot of money to fund alternative fuel vehicles through the Volkswagen Settlement Funds. Non-taxable entities, such as school districts, are also now eligible to apply for some federal tax incentives pertaining to electric school buses – the Commercial Clean Vehicle Tax Credit and the Alternative Fueling Infrastructure Tax Credit.

Is our school district required to apply for the Clean School Bus Program?

Although school districts are not required to apply to the EPA rebate simply because they are eligible. Wyoming Statute §21-13-320(m) states, “No district shall purchase or lease a school bus unless it first demonstrates [to the department] that the school district has in good faith attempted to purchase or lease a bus that will be fully or partially paid for or rebated under the Diesel Emissions Reduction Act, 42 U.S.C. 16131 et seq., or other similar program.”^[10]

How does our school apply for the EPA Clean School Bus Rebate?

The application must be submitted through the EPA's Clean School Bus [rebate portal](#).^[11] Applicants are encouraged to use the EPA [User Guide](#) when applying.^[12] Schools may apply for up to 25 alternative fuel buses but all of them must replace existing diesel or gas buses.

Which school districts are prioritized by the EPA Clean School Bus Rebate?

Big Horn County #1, 2, 3, and 4; St. Stephen's Indian School; Fremont Co. #2, 6, 14, 21, 24, 38; Carbon Co. #2; Crook Co. #1; Lincoln Co. #2; Niobrara Co. #1; Park Co. #16; Sheridan Co. #3; Sublette Co. #1 and 9. Uintah Co. #4 and 6; Washakie Co. #2; Weston Co. #7.^[13]

[10] <https://wyoleg.gov/NXT/gateway.dll?f=templates&fn=default.htm>

[11] <https://app.epa.gov/csb/welcome>

[12] <https://www.epa.gov/system/files/documents/2023-09/420b23039.pdf>

[13] <https://www.epa.gov/system/files/documents/2023-09/fy23-csb-prioritization-list-rebates-2023-09.pdf>

Case Study - Havre, Montana



About Havre

Population: 9,362

Climate: August average maximum 99.1F

January average minimum -23.5F

Range & Use

The two electric buses service local routes – one city (~30 miles/day) and one rural (~45 miles/day). After consultation with Lion Electric, they determined that the 100-mile bus range would adequately suite their needs. The fleet manager does not intend to replace the entire fleet with electric buses but would like to purchase two more for fixed local routes.

Cold Weather Functionality

During -30°F weather, the electric buses remained comfortable and warm and the windshield stayed defrosted. These buses were deployed in -40°F weather when their diesel counterparts failed to start. Having an auxiliary diesel heater helped to not drain the battery and maintained sufficient range to complete local bus routes. Buses were charged indoors in an unheated bus barn.

School Bus Fleet Profile



17 Diesels, 3 Gas, 4 Coach, 2 Electric

↪ Want to transition two more buses to electric.

Upfront Cost

~ \$700,000

Cost of two Lion Electric buses & charging infrastructure

~ \$100,000

School's portion after Volkswagen Settlement and EPA funding

Cost per Mile

Gas = \$0.83/mile

Diesel = \$0.56/mile*

Electric = \$0.23/mile**

*Does not account for electricity costs to plug in block heaters on the diesel buses, which uses nearly as much electricity as it takes to charge the electric buses.

**Havre's electric buses have a diesel auxiliary heater which adds another \$.001 to the cost per mile.



Image: FOX 29 Philadelphia

Watch the interview with Havre's bus fleet manager.

<https://www.youtube.com/watch?v=hFbfiwz3yI8>