

A young boy in a blue and white jacket and tan pants is running towards the camera, smiling. Behind him, a girl in a pink jacket and blue pants is walking down the steps of a yellow school bus. The bus is parked on a paved area with greenery in the background. The scene is overlaid with a semi-transparent dark grey filter.

# THE SCHOOL BUS MODERNIZATION ACT

Charles Goodmacher for NMVC ACTION FUND

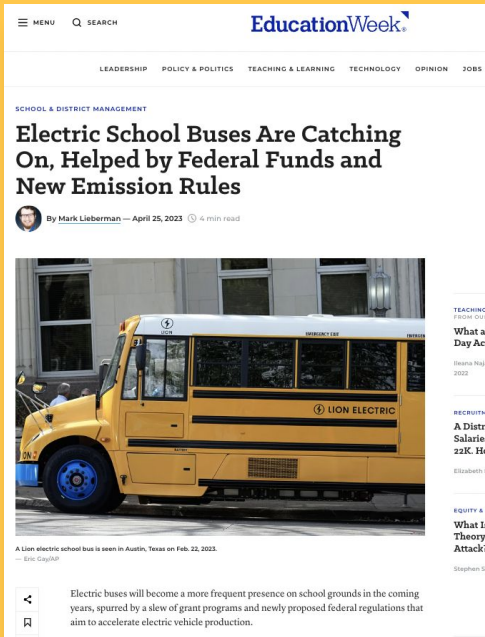
# WHY THIS BILL?

Providing support for New Mexico schools to transition from diesel to electric buses will advance these legislative priorities:

1. Improve physical and mental health for ALL New Mexico students (addressing Yazzie Martinez mandates)
2. Increase funds available for classroom instruction through reduced transportation and energy costs
3. Reduce greenhouse gas emissions by increasing the number of public charging stations in rural communities.



# ELECTRIC SCHOOL BUSES: *The BIG Picture!*



The screenshot shows the EducationWeek website interface. At the top, there is a navigation bar with 'MENU', 'SEARCH', and the EducationWeek logo. Below this is a secondary navigation bar with categories: LEADERSHIP, POLICY & POLITICS, TEACHING & LEARNING, TECHNOLOGY, OPINION, and JOBS. The main content area features the article title 'Electric School Buses Are Catching On, Helped by Federal Funds and New Emission Rules' by Mark Lieberman, dated April 25, 2023, with a 4-minute read time. A large photograph of a yellow Lion Electric school bus is displayed. Below the photo is a caption: 'A Lion electric school bus is seen in Austin, Texas on Feb. 21, 2023. — Erin Gray/AP'. To the right of the main image, there are several article teasers with titles like 'What's a T Day Act?', 'A District Salaries, 22K. How', and 'What Is Theory, a Attack?'. At the bottom left of the article, there is a small icon and a short paragraph: 'Electric buses will become a more frequent presence on school grounds in the coming years, spurred by a slew of grant programs and newly proposed federal regulations that aim to accelerate electric vehicle production.'

Five New Mexico School Districts received federal funding in 2023 for new Electric School Buses, more applied this year! New Mexico has 2,007 school buses overall, only 14 of which are soon to be Electric!

Nationally 400 districts have been awarded nearly \$1 billion to purchase a total of 2,400 electric buses. New Mexico can be at the forefront of this important national initiative.

<https://www.edweek.org/leadership/electric-school-buses-are-catching-on-help-ed-by-federal-funds-and-new-emission-rules/2023/04>

# ELECTRIC SCHOOL BUSES:

## *The BIG Picture!*

*The Clean School Bus Program* is part of the 2021 *Bipartisan Inflation Reduction Act*. It is administered by the EPA. The Department of Energy's Alternative Fuels Data Center site provides resources webinars and videos to inform states and school districts with case studies, incentives and logistical strategies for transitioning to electric school buses.

[https://afdc.energy.gov/vehicles/electric\\_school\\_buses.html](https://afdc.energy.gov/vehicles/electric_school_buses.html)

Las Cruces PS estimates their ESBs will have approximately a 125 mile range. The average school bus ride in New Mexico is less than 32 miles with 99% of routes being under 78 miles.

<https://stnonline.com/partner-updates/6-myths-about-electric-school>

# YOUR LEGISLATIVE EDUCATION STUDY COMMITTEE REPORT ON SCHOOL TRANSPORTATION REPORT RECOMMENDS ELECTRIC SCHOOL BUSES!

"Build a funding mechanism for electric school buses. ... The legislature can provide funding for electric school buses, ... State funds for electric school buses should be provided for districts that are ready to proceed with electric buses and have shown that readiness by applying for federal electric bus grants."

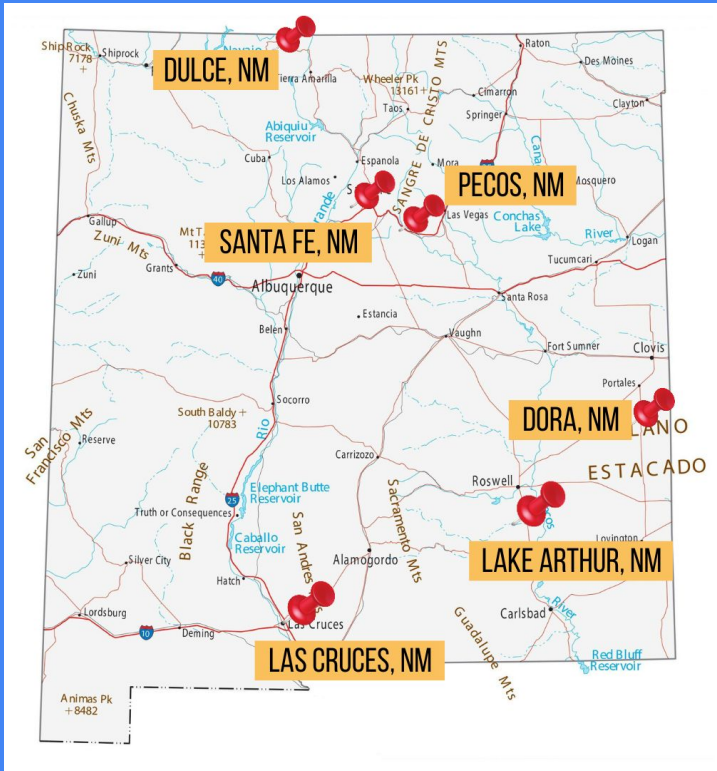
*Study of the Public School Transportation Distribution  
LESC Oct 12, 2023*

<https://www.nmlegis.gov/handouts/ALESC%20101123%20Item%208%20.1%20-%20LESC%20Study%20of%20the%20Transportation%20Distribution.pdf>





# FIVE NEW MEXICO DISTRICTS ARE GOING ELECTRIC VIA EPA PROGRAM. SANTA FE TOO!



LCPS

## Las Cruces Public Schools awarded \$2M in federal money for electric school buses

**Algernon D'Amassa**  
Las Cruces Sun-News

Published 1:38 p.m. MT Oct. 27, 2022

**School districts embrace electric buses**  
Efforts to make school buses greener are gaining momentum thanks to billions of dollars in spending in the federal infrastructure plan. (Oct. 29 AP)

LAS CRUCES – New Mexico's second-largest school district, the Las Cruces Public Schools, has been awarded nearly \$2 million to purchase electric school buses under a federal rebate program.

LCPS was one of five school districts in New Mexico awarded funds under the Environmental Protection Agency's Clean School Bus Program, alongside smaller

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S&P 500 4,109.36 -27.87 (-0.67%) Dow 30 37,422.42 -365.88 (-1.0%) Nasdaq 12,601.22 15.41 (0.12%) Russell 2000 1,636.16 -20.84 (-1.26%) Crude Oil 85.76 -2.55 (-2.90%)

Eastern New Mexico News, Clovis, N.M.

### Dora schools get grant for electric school buses

Eastern New Mexico News, Clovis, N.M.  
October 29, 2022 - 2 min read

Oct. 29—SANTA FE — The federal Environmental Protection Agency (EPA) Wednesday announced the award of funding for five New Mexico school districts to buy 12 electric school buses.

According to a news release from New Mexico Senator Martin Heinrich, founder and co-chair of the Electrification Caucus said, "I am thrilled to welcome this first round of funding for the Clean School Bus Program."

"Electric school buses save New Mexico school districts money," Tammy Fiebelkorn, New Mexico Representative of the Southwest Energy Efficiency Project said.

Nena Benavidez, Co-Founding Director of Creciendo Nuevo México and resident of Grant County said, "This is a tremendous opportunity to reduce our carbon footprint and protect our rural environment."

The news release reported the Bipartisan Infrastructure Law included \$5 billion to help

- [Las Cruces Sun News article about their new electric buses.](#)
- [Yahoo Finance article about Dora and electric bus.](#)

## SANTA FE HAD ALREADY MOVED TOWARD ADDING ELECTRIC TO THEIR SCHOOL BUS FLEET IN 2022!

SFPS was awarded \$1,119,987 in 2022 from the Volkswagen Environmental Mitigation Settlement for the purchase of three new electric buses.

“Our move to electric school buses is great for the environment and, most importantly, our students. Replacing buses that are more than 10 years old and diesel-powered with alternative-fuel buses will result in reduced tailpipe pollution, greenhouse gas emissions and lowered fuel costs. It’s a win-win for everyone,” said Superintendent Hilario “Larry” Chavez.





## IT'S A MATTER OF STUDENT HEALTH!

Exposure to diesel exhaust, according to the EPA, can lead to asthma and respiratory illnesses and worsen heart and lung ailments, especially in children and the elderly.

The National Institute for Occupational Safety and Health, the International Agency for Research on Cancer, United States Environmental Protection Agency, and the National Toxicology Program all consistently agree there is a relationship between diesel exhaust exposure and lung cancer.





## IT'S A MATTER OF STUDENT HEALTH!

Exposures of occupants in school buses to on-road vehicle emissions, including emissions from the bus itself, can be substantially greater than those in outdoor settings.

<https://pubmed.ncbi.nlm.nih.gov/21608489/>

Increasing evidence has demonstrated toxic effects of ultrafine particles (UFP\*, diameter < 100 nm). Children are particularly at risk because of their immature respiratory systems and higher breathing rates per body mass.

<https://pubmed.ncbi.nlm.nih.gov/24834688/>

*Characterizing ultrafine particles and other air pollutants in and around school buses. HEI Health Review Committee*

# ACADEMIC PERFORMANCE INCREASED WITH CLEANER BUSES!

NBER WORKING PAPER SERIES

SCHOOL BUS EMISSIONS, STUDENT HEALTH, AND ACADEMIC PERFORMANCE

Wes Austin  
Garth Heutel  
Daniel Kreisman

Working Paper 25641  
<http://www.nber.org/papers/w25641>

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
March 2019

We thank the GaDER program for assistance in identifying retrofits. We thank Jonathan Smith, Ariell Zimran, and seminar participants at TEAM-Fest, the Southern Economics Association annual meeting, and the University of South Carolina for helpful comments. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

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Districts see significant test score gains in English and smaller gains in math. Results suggest that engine retrofits [and zero emission ESB's] can have meaningful and cost-effective impacts on health and cognitive functioning.

[https://www.nber.org/system/files/working\\_papers/w25641/w25641.pdf](https://www.nber.org/system/files/working_papers/w25641/w25641.pdf)

(written before the new funding for electric buses)

# MORE \$ FOR OUR STUDENT'S EDUCATION, LESS WASTED ON RISING FUEL COSTS!

A school district operating an ESB can expect to see over \$100,000 in lifetime fuel and maintenance savings, compared to an equivalent diesel bus, which can help offset the currently higher purchase price of an ESB. Market experts expect that the lifetime costs of electric school buses will be around the same as diesel buses — by the end of this decade.

<https://electricschoolbusinitiative.org/all-about-total-cost-ownership-tco-electric-school-buses>

<https://cleantechnica.com/2022/02/02/the-real-cost-of-electric-school-buses-is-lower-than-you-think/> and

<https://electrek.co/2022/03/18/electric-school-buses-are-reaching-cost-parity-with-diesel-and-a-california-district-will-deploy-one-of-the-largest-e-bus-fleets-in-the-state/>



# ESBS WILL BENEFIT NEW MEXICO'S LOW INCOME, RURAL AND WIDELY DISPERSED STUDENTS

The Majority of N.M. School Bus Riders Are  
Low-Income and/or students of Color:

“This disproportionately impacts low-income communities and Black, Indigenous, Latinx and other communities of color, who are already more likely to be living in areas with dirtier air and are more likely to suffer — and die — from illnesses like asthma. Asthma is the number one chronic illness for children, the #1 cause of school absences, and has no cure.”

<https://electricschoolbuses4kids.org/our-work/>





# ESBS WILL BENEFIT NEW MEXICO'S LOW INCOME, RURAL AND WIDELY DISPERSED STUDENTS

Electric School Buses Can Fight Inequity in the US. Most students — especially those from low-income and communities of color — ride diesel-powered buses that regularly expose them to toxic fumes linked to asthma, cancer and other illnesses.

<https://electricschoolbusinitiative.org/electric-school-buses-can-fight-or-further-inequity-us>



# COLORADO IS LEADING THE WAY WITH \$65 MILLION FOR ESB'S! OTHER STATES GOING 100% ELECTRIC!

<https://pirg.org/colorado/foundation/resources/2022-state-of-electric-school-buses-in-colorado/>

**CO SB22-193** (enacted 2022): created the electrifying school buses grant program to award grant money to school districts to help finance the purchase and maintenance of electric-powered school buses, the conversion of fossil-fuel-powered school buses to electric-powered school buses, charging infrastructure, and upgrades for electric charging infrastructure and the retirement of fossil-fuel-powered school buses.

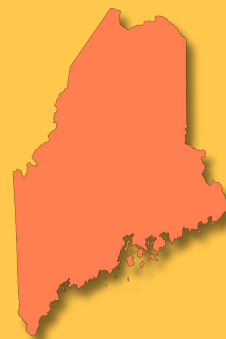
<https://cdphe.colorado.gov/electric-school-buses>



# COLORADO IS LEADING THE WAY WITH \$65 MILLION FOR ESB'S! OTHER STATES GOING 100% ELECTRIC!

**ME L.D. 519** (enacted 2023): requires the Efficiency Maine Trust to design and operate a 2-year vehicle-to-grid pilot project to use electric school buses to store energy from the electric grid during times of low demand and low usage rates and discharge the stored energy to the grid during times of high demand and high usage rates.

**VA H.B. 2118** (enacted 2021): establishes the Electric Vehicle Grant Fund and Program for the purpose of awarding grants on a competitive basis for replacing diesel school buses with electric school buses, implementing recharging infrastructure, and providing training to support the maintenance, charging, and operation of such electric school buses.



# WHAT IF THE GRID GOES DOWN?

- During a catastrophe, ESB's will continue to run – same as with diesel – to bring students home or to school, whatever the district decides is best in the circumstances.
- Buses ready to transport schools will not be needed when school is cancelled for lack of power.
- Charged buses can be used to satisfy critical power needs in an emergency.
- “A switch to electric school buses not only eliminates emissions that harm public health, it also plays a role in the state’s larger clean energy transition. Electric buses can serve as batteries on the grid and help utilities meet demand”  
<https://energynews.us/2022/08/19/federal-electric-bus-program-leaves-chicago-other-school-districts-behind/>
- See this short news story from North Carolina focusing on Vehicle-To-Grid benefits  
<https://www.wcnc.com/video/news/local/ev-bus-benefits-beyond-environmental-impacts/275-b6ccf82e-04fa-4b1c-88f3-014844871602>
- And this 45 second video on inside the bus health hazards our students encounter every time they ride a diesel bus: <https://www.youtube.com/watch?v=coJmUW5l-98>



# A RESOURCE FOR DISASTERS AND EMERGENCIES!

## *Vehicle to Grid*

Last fall, Highland Electric Fleets and Thomas Built Buses helped supply electricity back to the grid for the first time in Massachusetts. The electric school bus discharged nearly 3 megawatt-hours of electricity total to the regional electric grid over the course of 30 events this summer.

“We help with storing energy and stabilizing our local grid using the energy stored in the bus batteries,” said an official of the Cajon Valley Union School District (CVUSD) near San Diego, which transports 1,000 students and has seven electric school buses (ESBs) in its fleet.

<https://stnonline.com/special-reports/can-electric-school-buses-pass-tests-posed-by-heat-waves/#:~:text=Gilbert%20Rosas%2C%20the%20district%E2%80%99s%20director%20of%20sustainability%20and,is%20unlikely%20to%20adversely%20affect%20EV%20school%20buses.>

# A RESOURCE FOR DISASTERS AND EMERGENCIES!

## *Vehicle to Grid*

Electric School buses sit idle up to 91% of the time (Bus To Grid Initiative), some of which time they could discharge their clean energy into the grid. 14 states have V2G pilot projects.

<https://www.epa.gov/greenvehicles/what-if-electric-school-buses-could-be-used-supply-power-when-dutyE>  
(WRI) <https://electricschoolbus.org/vehicle-to-grid-relevant-or-not-the-least-you-need-to-know/>



# COLD WEATHER, ROUGH ROADS NOT AN OBSTACLE

“The elevation at our bus garage is 7,500 feet, and my route is above 9,000 feet. As the primary driver for our electric bus, I am impressed by its power when it climbs the long and steep Gore Pass on my route. This pass is rarely plowed prior to my use in the morning, and the electric bus’s performance has been excellent. Despite poor road conditions, the electric bus has never had any issues.” Bethany Aurin Transportation Director, West Grand School District, Colorado

Electric school buses are successfully operating in all manner of weather and climates – such as Three Rivers, Michigan.



# COLD WEATHER, ROUGH ROADS NOT AN OBSTACLE

Electric school buses are successfully operating in all manner of weather and climates – such as Three Rivers, Michigan.

It remains freezing there most days, all day long December to February

<https://electricschoolbusinitiative.org/electric-school-bus-series-successfully-operating-cold-weather-three-rivers-michigan-0>

School districts in cold climates are finding they can make adjustments that minimize energy loss in electric school bus batteries.

<https://electricschoolbusnews.substack.com/p/electric-school-buses-in-winter-early>

[https://news.yahoo.com/electric-school-bus-operates-temps-13400211.html?fr=sycsrp\\_catchall](https://news.yahoo.com/electric-school-bus-operates-temps-13400211.html?fr=sycsrp_catchall)







## HOT WEATHER: ALSO NOT A PROBLEM

Manufacturers have developed BMS (battery management system) and BTMS (battery thermal management system) to control and access the full capability of its batteries, and drivers can expect full range in all conditions.

<https://stnonline.com/partner-updates/6-myths-about-electric-school-buses-debunked/>

Cajon Valley (CA.) school district's electric buses weren't on route during the heatwave and were plugged in to test the V2G functionality during an actual Emergency Load Reduction event. Ten days of 100-degree-plus temperatures had little negative effect on the electric buses.

<https://stnonline.com/special-reports/can-electric-school-buses-pass-tests-posed-by-heat-waves/>

# WORKFORCE CONCERNS: DRIVERS LOVE THE BUSES, TECHNICIANS/MECHANICS NEED TRAINING

Staff including fleet operators, maintenance technicians, drivers, school bus dealers, and first responders need access to robust training to safely and effectively support the operations and maintenance of ESBs. In particular, technicians and mechanics need extensive training to work in the presence of high voltage batteries and electrical system.



# WORKFORCE CONCERNS: DRIVERS LOVE THE BUSES, TECHNICIANS/MECHANICS NEED TRAINING

EVs drive just like their gasoline and diesel counterparts – and in many ways are actually simpler to drive. There are no gears to worry about, power delivery is smooth with instant response, and EVs are also nearly silent – with less noise, vibration and harshness than is typically associated with diesel or gasoline drivetrains. As a result, drivers can hear more of what's going on in the bus, visibility can be improved due to fewer constraints from engine placement, and both students and drivers are less stressed from quieter rides.

Extensive Training Resources are Available!

<https://www.epa.gov/cleanschoolbus/workforce-development-and-training-resources>

<https://electricschoolbusinitiative.org/reskilling-workforce-training-needs-electric-school-bus-operators-and-maintenance->

## ***THE SCHOOL BUS MODERNIZATION ACT IS COMPREHENSIVE***

### **SUPPORT FOR LOCAL DISTRICTS**

- Provide in-state expertise for districts. Provide a special supplemental appropriation of \$100,000 to the Public Education Department Transportation unit to build their capacity for sharing electric bus and infrastructure expertise with districts including assistance with grant applications, providing workshops for district transportation managers and hosting a "grant bank."

### **REMOVAL OF FINANCIAL DISINCENTIVES FOR DISTRICTS TO GO ELECTRIC**

- Eliminate the financial shortage between the actual costs of implementing new Electric buses and the funds provided by the EPA. Modify existing rules, to allow funds currently provided by the state for the purchase of diesel buses.

### **INCLUSION OF ELECTRIC INFRASTRUCTURE In CAPITAL OUTLAY**

- Amend the state's public school capital outlay process to include infrastructure for building and school bus and other vehicle electrification in the eligibility list for matching funds. The language does not presently allo



## ***THE SCHOOL BUS MODERNIZATION ACT IS COMPREHENSIVE***

### **PROVIDES FOR A NEEDS ASSESSMENT FOR DISTRICTS TO DETERMINE INFRASTRUCTURE NEEDS**

- Fund a statewide design and engineering study to assess school district readiness and implementation needs to make the switch from diesel to electric buses.
  - NMSU is ready to perform an Electric Bus Transition Study and estimate the cost to be \$400,000 for a 1-year study starting in July 2024.
  - This study will leverage the expertise of Arrowhead Center, the NMSU Center for Public Utilities, and NMSU's Power Engineering Program. These programs are unique offerings in New Mexico.
  - This study has the added benefit of effectively being a hands-on workforce development opportunity for New Mexicans studying to be electrical engineers!

### **FUNDS ESBS FOR DISTRICTS THAT DON'T RECEIVE FEDERAL FUNDS: ESTABLISH A \$50 MILLION ESB FUND**

- Allow Districts who submit their applications for the EPA Clean School Bus program to submit a duplicate to our PED.
  - Districts not receiving federal grants (not due to application deficiency) would be eligible for the same funds from our state.
  - Use the state's current funding to replace diesel buses. A \$50 million fund to supplement normal recurring appropriations in an amount sufficient for diesel bus purchases would provide sufficient funds for about 140 new buses.

# A WIN, WIN, WIN, WIN, WIN!

With Appropriate Support from the State of New Mexico, Our Most Vulnerable Students Could Soon Be Breathing Clean Air While More of Our Taxpayer Dollars Get Into Classrooms!

Replacing retired diesel school buses with electric buses provides big benefits for New Mexico students, educators and communities:

- Less asthma and other respiratory problems among all students, reducing environmental and health disparities among NM students and staff.
- Improved health is directly linked to student's ability to perform better academically, and attendance is boosted!
- More funds can be used directly for instruction, rather than paying for high cost diesel fuel and diesel engine maintenance.
- Rural New Mexicans can gain access to local EV chargers when Districts join with electricity providers as is being done in Southeast New Mexico's Lake Arthur