



# Air Resources Board



**Matthew Rodriguez**  
Secretary for  
Environmental Protection

**Mary D. Nichols, Chair**  
1001 I Street • P.O. Box 2815  
Sacramento, California 95812 • [www.arb.ca.gov](http://www.arb.ca.gov)

**Edmund G. Brown Jr.**  
Governor

DATE: October 13, 2015

Mail-Out #MSC 15-19

TO: All Interested Parties

SUBJECT: THE LOWER-EMISSION SCHOOL BUS PROGRAM - USING  
ASSEMBLY BILL 923 FUNDS FOR ZERO-EMISSION SCHOOL BUS  
FLEET EXPANSIONS AND ALL-ELECTRIC SCHOOL BUS  
CONVERSIONS

---

Changes and clarifications to the Lower-Emission School Bus Program (LESBP) are being made via mail-out under the authority granted by the Air Resources Board (ARB or Board) during the March 25, 2010 Board Meeting (Resolution 10-19). In accordance with Resolution 10-19, this mail-out provides guidance to local air districts and eligible school bus owners participating in the LESBP. Guidance in this mail-out is provided for using local air district Assembly Bill 923 funds for allowing fleet expansion when purchasing any new zero-emission school buses and funding all-electric school bus conversions (AB 923, Stats 2004 Ch 707).

The primary goal of the LESBP is to reduce children's exposure to both cancer-causing and smog-forming pollution. Cleaner school buses, whether zero-emission or conversion to all-electric, are an important component of the LESBP, as school buses typically remain in service for extended periods of time. Zero-emission school buses and all-electric school bus conversions have no tailpipe emissions, resulting in significant and immediate emission reductions that benefit children's health.

## Zero-Emission School Bus Purchases (Fleet expansion)

Current language in the LESBP Guidelines requires that only replacement school buses be funded when older, dirtier school buses are dismantled and does not currently allow for fleet expansion. Current language also requires a replacement school bus to have a gross vehicle weight rating (GVWR) of 14,001 pounds or greater. This mail-out allows fleet expansion for purchases of zero-emission school buses, including new zero-emission school buses and zero-emission school bus conversions using a new school bus chassis, and does not limit the new school bus to a GVWR limit.

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

### All-Electric School Bus Conversions

Effective January 1, 2012, Assembly Bill 470 (AB 470, Stats 2011 Ch 174) authorized using AB 923 funding for the purchase of new school buses, or retrofit of emissions control equipment for used school buses pursuant to the LESBP. ARB interprets this language as allowing the replacement of a fossil-fueled engine and drivetrain with an all-electric motor and drivetrain (all-electric school bus conversion). CHP requires engineering plans, certified by a California licensed engineer, to be able to safety certify a school bus. All-electric school bus conversions using technologies that have already been demonstrated on school buses and that have engineering plans are eligible for local air district AB 923 funding.

#### **1. Eligibility Requirements**

##### **A. Eligible Applicants for School Bus Funding**

Public school districts in California that own their own school buses are eligible to receive funding for zero-emission school bus purchases (fleet expansion) and all-electric school bus conversions. This includes public school districts that own their school buses but contract with a County Office of Education or private contractor for maintenance and operations. Where several public school districts have formed a Joint Powers Authority (JPA), and the JPA holds ownership of the school buses, then the JPA is also eligible to participate. Public charter schools that own their own school buses and County Offices of Education that own their school buses are also eligible to participate.

Private transportation providers that own their school buses and contract with public school districts to provide transportation services for public school children are also eligible to receive grant funding for zero-emission school bus purchases and all-electric school bus conversions.

##### **B. School Buses Eligible for All-Electric Conversions**

School buses with current California Highway Patrol (CHP) safety certifications qualify for all-electric school bus conversion funding if all other requirements in the LESBP Guidelines are met. There is not a gross vehicle weight rating requirement of over 14,000 pounds for an electric school bus conversion funded by local air district AB 923 funds.

## 2. **Project Life**

The zero-emission school bus and the school bus selected to be converted to all-electric with local air district AB 923 funding must be able to operate for at least a five-year project life.

## 3. **Additional Requirements**

The following documentation is required from the vendor (whether from a zero-emission school bus or an all-electric school bus) for new and converted school buses purchased under the LESBP with local air district AB 923 or other funds.

### A. ARB Engine or Vehicle Certification (i.e. Executive Order) or ARB Approval Letter

Only zero-emission vehicles that are ARB certified or approved may be funded. For new zero-emission vehicles or conversions funded under the LESBP, an ARB approval letter is required. Information requested in the document "Information Required for Review of Requests for Approvals of Battery Electric / Hydrogen Fuel Cell Electric Heavy-Duty Vehicles" ([http://www.arb.ca.gov/msprog/cihd/resources/content/approvals/approvals-hdelectric-checklist\\_20130506.pdf](http://www.arb.ca.gov/msprog/cihd/resources/content/approvals/approvals-hdelectric-checklist_20130506.pdf)) must be submitted in order for ARB to verify that the vehicles do not emit any vehicle exhaust emissions or fuel-based evaporative emissions. Please submit the requested information to:

Attn: Annette Hebert, Division Chief  
Emissions Compliance, Automotive Regulations and Science (ECARS) Division  
9480 Telstar Avenue, Ste. #4  
El Monte, CA 91731

### B. Warranty Provisions

The vendor warranty must provide protection for a minimum of 60 months or 75,000 miles, whichever comes first, and provide full warranty coverage of, at a minimum, zero-emission or all-electric motor, drive train, batteries/energy storage system(s), parts and labor. Warranties must be fully transferrable to subsequent school bus purchasers for the full warranty coverage period.

Warranties must cover the following for the full warranty period (unless otherwise denoted):

- Extended Motor, Drivetrain (including Battery), and Zero-Emission Components: Provide warranty coverage against defects in material and workmanship for the motor, transmission, rear axle, and electric or zero-emission system components including the battery. Gaskets and seals are not required to be included under the warranty coverage.
- Frame Rails, Cross Members, and Cab: For new school buses, coverage extends to structural cracks in the frame caused by defects in material workmanship and against corrosion perforation of the cab. For school bus conversions, the all-electric school bus vendor is only responsible for damage or corrosion tied to, or resulting from, their workmanship on, or handling of, these parts.
- Battery Degradation Warranty: Provide warranty coverage against battery degradation below 80 percent of capacity.

#### C. Other Battery Information

The vendor must provide to the school bus owner documentation of the following battery information:

- i. Type of battery pack(s)
- ii. Size of battery pack(s)
- iii. Expected life of battery pack(s)
- iv. Type of battery
- v. Size of battery (kilowatt-hour)
- vi. Fast charge capability, if applicable

#### D. Service Provisions

The vendor must provide to the school bus owner a description of the plan to provide routine vehicle service.

#### E. Price Sheet

The vendor must provide a price sheet to the school bus owner for the new zero-emission school bus or all-electric school bus conversion.

#### F. Minimum Zero-Emission (i.e. All-Electric) Range

The vendor must demonstrate to purchaser that a minimum of 35 miles of zero-emission range can be traveled on a single charge on the route that will be traveled by the purchased vehicle.

#### G. Manufacturer's Information About Impacts to Zero-Emission Range

The vendor must provide to the school bus owner information from the manufacturer about operating conditions that can impact vehicle driving range and what those impacts are.

#### H. Temperature Range

The vendor must provide to the school bus owner the temperature range (ambient temperature conditions) needed for operating the zero-emission or all-electric school bus.

#### I. Proper Disposal of Batteries Description

The vendor must provide to the local air district a brief description of the information provided to the school bus owner regarding proper disposal of the vehicle battery and a description of how this information is conveyed to purchaser.

#### J. Documentation for CHP Safety Certification

The local air district must keep a copy of the CHP safety certification documentation in the project file that shows that the or zero-emission or all-electric school bus conversion has been inspected and signed off by CHP. The CHP safety certification documentation must be obtained by the school bus owner after the CHP has conducted a passing inspection. The school bus owner is required to provide documentation to the local air district that consists of a copy of a completed CHP form 343 – Safety Compliance Report/Terminal Record Update, OR a copy of a completed CHP form 343A – Vehicle/Equipment Inspection Report Motor Carrier Safety Operations or equivalent.

### 4. **Requirements Specific to All-Electric School Bus Conversions**

#### A. School Buses to be Converted Must be Ten-Years Old or Newer

This requirement is to help safeguard that all-electric school bus conversions are in good operating condition and remain in service through the required five year minimum project life.

B. Converted School Buses Must Have Certified Engineering Plans

The vendor performing the all-electric conversion must provide a set of engineering plans certified by a California Licensed Engineer to the CHP for the required safety certification inspection.

5. **Allowable Costs**

A. Purchase Costs for New Zero-Emission School Buses and All-Electric School Bus Conversions

Local air district AB 923 funds may be used to pay up to \$400,000 of the purchase cost of the zero-emission school bus and all-electric school bus conversion. ARB anticipates conversion costs of about \$200,000 per all-electric school bus conversion. However, the local air district may limit the amount of AB 923 funds spent on any school bus project.

B. Infrastructure Costs for New Zero-Emission School Buses and All-Electric School Bus Conversions

Local air district AB 923 funding for infrastructure necessary for powering zero-emission school buses and all-electric school bus conversions is allowed up to \$20,000. AB 923 funding for vehicle to grid infrastructure costs is allowed up to 100 percent; however, the local air district may limit the amount of AB 923 funds spent on any school bus project.

6. **Maintenance Costs are Disallowable**

AB 923 funding may not be spent on maintenance costs for zero-emission school buses and all-electric school bus conversions.

7. **Contract Requirements (between the local Air District and School Bus Owner)**

A. Project Life

Successful applicants must make an enforceable commitment to own and operate the zero-emission school buses and all-electric school bus conversions for a minimum of five years (project life).

B. Pro-rating funds

Language included in the contract for all projects must stipulate that the school bus (including the chassis) must operate for the length of the project life or a pro-rated amount of the awarded funds must be returned to the local air district.

C. CHP Documentation of Safety Certification

Language must be included in the contract that stipulates that the vendor cannot receive payment until the school bus has been inspected by the CHP and the CHP has completed written documentation signifying that the school bus is safe to operate with children aboard.

**8. CHP Inspection Prior to Return to Service**

All school buses must pass a CHP safety inspection [per Title 13, California Code of Regulations section 1272(c)] every thirteen months and prior to its return to service. For all-electric school bus conversions, CHP requires engineering plans, certified by a California licensed engineer, of the converted school bus to conduct the required safety certification inspection.

**9. No Payment Prior to CHP Inspection**

All school buses must be safety certified by the CHP in order to receive payment with incentive funding. Copies of a completed CHP form 343 – Safety Compliance Report/Terminal Record Update, OR a copy of a completed CHP form 343A – Vehicle/Equipment Inspection Report Motor Carrier Safety Operations, or equivalent must be received by the local air district prior to payment to the conversion vendor.

If you have questions regarding this Mail-Out, please contact Lisa Jennings, Air Pollution Specialist, at (916) 322-6913 or via email at [lisa.jennings@arb.ca.gov](mailto:lisa.jennings@arb.ca.gov).

Sincerely,

/s/

Erik White, Chief  
Mobile Source Control Division

cc: See next page

All Interested Parties  
October 13, 2015  
Page 8

cc: Annette Hebert, Chief  
Emissions Compliance, Automotive Regulations and Science Division

Lisa Jennings, Air Pollution Specialist  
Mobile Source Control Division