Date of Hearing: April 20, 2022

ASSEMBLY COMMITTEE ON EDUCATION
Patrick O'Donnell, Chair
AB 2731 (Ting) – As Amended March 24, 2022

SUBJECT: Schoolbuses: zero-emission vehicles

SUMMARY: Requires all newly purchased, contracted, or operated schoolbuses of a local educational agency (LEAs) to be zero-emissions by January 1, 2035, extends continuing schoolbus lease and rental contracts for pupil transportation services, and extends continuing schoolbus lease and rental contracts containing purchase or cancel option for pupil transportation services.

Specifically, **this bill**:

1) Requires LEAs to have 100% of all newly purchased, contracted, or operated schoolbuses be zero-emission vehicles by January 1, 2035.

2) Defines an LEA to mean a school district, county office of education, or charter school.

3) Requires an extension of 15 years for continuing contracts of schoolbuses. Requires, if a continuing contract for the furnishing of transportation of pupils in school districts to and from school, to be a term not to exceed 15 years. Authorizes a contract to be renewable at the option of the school district and the party contracting to provide transportation services, jointly, at the end of the term of the contract. Requires the contract as renewed to include all of the terms and conditions of the previous contract, including any provisions increasing rates based on increased costs.

4) Authorizes a continuing contract to be made for the lease or rental of schoolbuses, and requires that contract not to exceed 15 years, except that if a lease or rental contract provides that the district may exercise an option either to purchase the buses or to cancel the lease at the end of each annual period during the period of the contract, the contract may be made for a term not to exceed 20 years.

5) Authorizes a continuing contract to be negotiated annually within the contract period when economic factors indicate negotiation is necessary to maintain an equitable pricing structure. Requires renegotiation to be subject to the approval of both contracting parties.

6) Requires any rental, lease, or lease-purchase of a schoolbus to comply with all applicable provisions related to schoolbuses and vehicles operated by school districts to transport students under existing law.

EXISTING LAW:

1) Defines a “schoolbus” as a motor vehicle designed, used, or maintained for the transportation of any school pupil at or below the 12th grade level to or from a public or private school or to or from public or private school activities. (Vehicle Code (VEH) 545)

2) Requires the California Highway Patrol to inspect every schoolbus at least once each school year to ascertain whether its construction, design, equipment, and color comply with all provisions of law. (VEH 2807)

3) Requires all diesel-fueled schoolbuses with a Gross Vehicle Weight Rating (GVWR) over 14,000 pounds to have a Level 3 PM filter, the highest level verified retrofit, or an original equipment manufactured particulate matter (PM) filter that most commonly comes installed on 2007 model year and newer engines. Prohibits, as of January 1, 2012, schoolbuses manufactured before April 1, 1977, to operate in California. Requires recordkeeping to demonstrate compliance in lieu of a report. (California Code of Regulations (CCR) 2025(k))

4) Authorizes the governing board of any school district to provide for the transportation of pupils to and from school whenever in the judgment of the board the transportation is advisable and good reasons exist therefor. Authorizes the governing board to purchase or rent and provide for the upkeep, care, and operation of vehicles, or to contract and pay for the transportation of pupils to and from school by common carrier or municipally owned transit system, or to contract with and pay responsible private parties for the transportation. Authorizes these contracts to be made with the parent or guardian of the pupil being transported. (Education Code (EC) 39800)

5) Requires, in order to procure the service at the lowest possible figure consistent with proper and satisfactory service, the governing board to, whenever an expenditure of more than $10,000 is involved, secure bids pursuant to the Public Contract Code whenever it is contemplated that a contract may be made with a person or corporation other than a common carrier or a municipally owned transit system or a parent or guardian of the pupils to be transported. Authorizes the governing board to award the contract for the service to those that are not the lowest bidder. (EC 39802)

6) Requires, if a continuing contract for the furnishing of transportation of pupils in school districts to and from school is made it must be made for a term not to exceed five years. Authorizes a contract to be renewable at the option of the school district and the party contracting to provide transportation services, jointly, at the end of the term of the contract. Requires the contract as renewed to include all of the terms and conditions of the previous contract, including any provisions increasing rates based on increased costs. (EC 39803)

FISCAL EFFECT: If the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

COMMENTS:

Need for the bill. The author states, "California has gathered substantial data on the impact of school bus emissions on children and the environment. The state has used this data to create funding programs and pilot projects to incentivize the adoption of school buses with reduced emissions. AB 2731 accelerates progress on limiting children's exposure to harmful pollutants by setting an achievable target for transitioning to zero-emission school buses. This bill requires that all purchases of new school buses to be zero emission by 2035 and extends the maximum length of transportation service and leasing contracts for zero emission buses. Even though the time children spend in school bus commutes account for less than 10% of a child's day, the

commutes contribute to 33% of a child's daily exposure to some air pollutants. AB 2731 is a timely and thoughtful approach to building a healthier future for our next generation."

Schoolbus fleets in California. According to a 2022 report from the Legislative Analyst's Office (LAO), *The 2022-23 Budget: Green School Bus Grant,* school districts that operate their own transportation services own about 15,800 schoolbuses, including small (10 people capacity) and large buses (50 or more people capacity). An additional 9,000 buses are owned by contractors. Out of 15,800 schoolbuses owned by districts, 10,200 of them are powered by diesel constituting nearly two-third of their fleet. Among other fuel types like gasoline, compressed natural gas, propane, and diesel, electric buses remain the least common as there are only a few hundred schoolbuses used statewide.

Diesel bus emissions can have harmful health effects. Diesel buses emit several pollutants that can have negative effects on human health. According to a 2005 study in the Journal of Exposure Analysis and Environmental Epidemiology, *Characterizing the Range of Children's Air Pollutant Exposure During School Bus Commutes,* minimizing commute times, using the cleanest buses for the longest routes, and reducing bus caravanning and idling time will reduce children's exposure to bus-related pollutants. The 2022 LAO report lists the most concerning pollutants to be nitrogen oxides and particulate matter (PM). Nitrogen oxides can irritate the human respiratory tract and can increase the risk of asthma and other respiratory diseases, and PM refers to tiny solid particles and liquid droplets that can become embedded in the lungs or bloodstream. Sustained exposure can cause breathing problems and lung damage. According to California Air Resources Board (CARB), in 1998, California identified diesel PM as a toxic air contaminant based on its potential to cause cancer. Other agencies, such as the National Toxicology Program, the U.S. Environmental Protection Agency, and the National Institute of Occupational Safety and Health have concluded that exposure to diesel exhaust likely causes cancer.

Reducing children's exposure to diesel PM. According to the LAO report, the CARB has taken several actions to reduce children's exposure to vehicle-related pollutants during their commute by schoolbus. In terms of regulatory requirements, all schoolbuses are required to have a PM exhaust filter or be designated as low-use, are restricted from idling; and are required to have routine smoke tests. The filters are at least 85% effective at reducing PM if schoolbuses are regularly maintained. Schoolbuses that weigh over 14,000 GVWR and transport pupils to and from school are under the schoolbus provisions of the Truck and Bus Rule (CCR 2025). In addition to the requirements already stated, school districts with schoolbuses under the Truck and Bus Rule must retire pre-1977 schoolbuses and maintain specified records of the vehicle. Overall, the Truck and Bus rule requires old heavy-duty trucks and buses to be retired in order to reduce diesel PM and other pollutants to meet the state's emission reduction goals and comply with the federal Clean Air Act.

Governor Newsom's Zero Emission by 2035 Executive Order. Signed in 2020, the Governor's Executive Order (N-79-20) sets a goal to end sales of internal combustion vehicles by 2045. Specifically, it states that 100% of new passenger cars, light-duty trucks, drayage trucks, off-road vehicles and equipment sales will be zero-emission by 2035. It also state that medium- and heavy-duty trucks sales will be zero-emission by 2045. The Executive Order falls under the purview of the Governor's Office of Business and Economic Development which works with multiple agencies including the CARB, California Energy Commission (CEC), PUC, Department of Finance, State Transportation Agency, local agencies and private entities to

develop the Zero-Emissions Vehicle Market Development Strategy (ZEV Strategy). The ZEV Strategy prioritizes accelerating large scale, affordable, and equitable ZEV market development to improve air quality, reduce greenhouse gas emissions, provide access to ZEV, and improve the workforce needed to maintain ZEV infrastructure.

Funding for cleaner schoolbuses. The CEC, the CARB, school and local air districts have invested funds to retrofit and replace schoolbuses with cleaner and zero-emission schoolbuses (i.e. electric or hydrogen fueled schoolbuses with zero tailpipe emissions). Since 2001, CARB and local entities have spent over $500 million to clean-up old schoolbuses by retrofitting or replacing the oldest schoolbuses in the state. Current and new funding for these efforts come from various programs, including but not limited to, the Hybrid Voucher Incentive Program (HVIP), Rural School Bus Pilot Project, Carl Moyer Program, AB 617 Community Air Protection funds, and Proposition 39 School Bus Replacement Program. Table 1 shows previous funding for schoolbus replacement in California.

- HVIP. Although not exclusively a schoolbus incentive program, the HVIP allows schoolbus operators to use vouchers to offset the cost of purchasing cleaner buses. The HVIP provides a voucher of up to $250,000 per zero-emission schoolbus.

- Rural School Bus Pilot program. The Rural School Bus Pilot project, administered by North Coast Unified Air Quality Management District and funded with cap-and-trade funds, prioritizes funds to rural schools and the oldest buses with the most miles. Schools can get up to $400,000 for zero-emission bus technologies, an additional $5,000 for charging infrastructure, and $165,000 for a hybrid bus.

- The Carl Moyer Program. The Carl Moyer Program is administered via collaborative effort between CARB and local air districts and is a competitive program open to vehicle owners that can prove that the incentive funds will be used to realize “cleaner” than required vehicle emission reductions. School bus operators can apply for funds to purchase zero-emission buses and the incentive will depend on numerous factors including the amount of pollution reduced.

- Proposition 39 School Bus replacement program. According to the CEC, SB 110 allocated $75 million from Proposition 39 funding to create the California Energy Commission School Bus Replacement Program to replace California's oldest diesel buses with all-new battery electric buses and install supporting charging infrastructure. A dashboard on CEC’s website is updated quarterly to display the progress in delivering CEC-awarded electric school buses and installing charging infrastructure throughout California. The $75 million was used exclusively for the purchase of battery-electric school buses and up to $26 million in Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funds was available to provide the necessary charging infrastructure to operate the buses. Workforce training and development funding through ARFVTP was also provided to school districts that purchased an electric bus. Each school district/COE is eligible to receive a maximum of 10 school buses under the application and up to $60,000 per school bus for electric charging infrastructure. Additionally, because charging electric buses can have significant impacts on the grid, CEC has made it a requirement that all eligible buses be vehicle grid integration capable. As part of this program, CEC notes that it is also, “using our established relationships with IOUs and POUs such as Sacramento Municipal Utility District (SMUD), we are

coordinating program efforts to maximum electric infrastructure financial incentives for school districts receiving an electric school bus from CEC."

- AB 617 – Community Air Protection Incentives. Community Air Protection incentives are available to support early action emissions reductions in communities most affected by air pollution, as well as to support communities selected for air monitoring or emissions reduction programs and those under consideration for future selection.

Table 1. Previous funding for school bus replacement in California (LAO 2022 report)

Previous Funding for School Bus Replacement in California

Amounts Through August 2021 (In Millions)

Program[a]	Administrator	Amount Allocated[b]	Period	Projects Funded			
				Electric Buses	Other Buses	Infrastructure	Retrofits
Lower-Emission School Bus Program	Various[c]	$310	Since 2001		X		X
AB 923 (vehicle registration surcharge for emission reductions)	Local air districts	237	Since 2008	X	X	X	X
Clean Truck and Bus Vouchers (HVIP)	CALSTART[d]	89	Since 2010	X	X		
School Bus Replacement Program	CEC	75	Since 2019[e]	X			
Volkswagen Environmental Mitigation Trust	SJVAPCD	65	Since 2018	X			
Small School District and County Office of Education Bus Replacement Program	CDE	64	Since 2000[f]		X		X
Rural School Bus Pilot Project	NCUAQMD	62	Since 2016[e]	X	X	X	
Community Air Protection Incentives	Local air districts	56	Since 2017	X	X	X	
Clean Mobility in Schools Pilot Project	CARB	25	Since 2018	X		X	
Clean Transportation Program	CEC	21	Since 2012		X	X	
Carl Moyer Program and State Reserve	Local air districts	16	Since 1998	X	X	X	
Federal Diesel Emissions Reduction Act	U.S. EPA	15	Since 2008	X	X		X
Sacramento Regional Zero-Emission School Bus Deployment Project	SMAQMD	15	Since 2017[e]	X		X	
Supplemental Environmental Projects for School Buses	CARB	5	Since 2012		X		X
Totals		**$1,054**					

[a] Excludes new state program established by the June 2021 budget plan and new federal program established in November 2021. These programs have not yet allocated any funding.

[b] Amounts reflect estimates by CARB except for Small School District and County Office of Education Bus Replacement Program.

[c] Various iterations of this program have been managed by CARB, local air districts, and SJVAPCD.

[d] CALSTART is a national nonprofit organization focused on clean transportation.

[e] Program funds fully allocated and additional allocations not expected.

[f] Reflects funding allocated from 2000-01 through the end of the program in 2012-13.

HVIP = Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project; CEC = California Energy Commission; SJVAPCD = San Joaquin Valley Air Pollution Control District; CDE = California Department of Education; NCUAQMD = North Coast Unified Air Quality Management District; CARB = California Air Resources Board; U.S. EPA = United States Environmental Protection Agency; and SMAQMD = Sacramento Metropolitan Air Quality Management District.

Governor's 2022-23 Budget Proposal. As part of the proposed budget for the 2022-23 school year, one-time Proposition 98 funds are providing a $1.5 billion grant program to help school

districts purchase electric school buses and constructing charging stations over three years for the purpose of achieving zero-emission schoolbus fleets. Specifically, grants of at least $500,000 would be available with priority for LEAs with high numbers of low-income students, youth in foster care, and English language learners, as well as small and rural LEAs. With the minimum grant amount of $500,000, an LEA will be able to acquire an electric school bus, construct the bus's charging infrastructure, and support other local school bus transportation needs.

Electric schoolbus fleets currently in operation. In 2017, the Twin Rivers Unified School District was the first school district in the nation to deploy ZEV electric schoolbuses. Funding was secured by various sources including the local POU (SMUD) and the California Climate Investment grant. To date, they have 40 electric buses and 37 CNG buses which represents the largest deployment of ZEV schoolbuses in North America. A student transportation company, Zum, began rolling out their electric buses in the Bay Area, across San Francisco Unified School District, Oakland Unified School District, Menlo School, and at Nueva School. They expect to electrify their fleet by 50% by the end of the 2022-23 school year.

No hydrogen-powered schoolbuses are used. According a 2021 report by the National Renewable Energy Laboratory, *Fuel Cell Buses in U.S. Transit Fleets: Current Status 2020,* hydrogen fuel cell buses are zero-emission vehicles and offer a greater range per bus. However, the report found that hydrogen fuel cell buses have problems making them an unfeasible choice of transportation for school districts. Problems include a lack of fueling stations and infrastructure, cost of hydrogen fuel, and reliability of the buses. Currently, there are no reports of school districts adopting hydrogen fuel cell schoolbuses in California.

Limitation of electric schoolbuses. According to the 2022 LAO report, the main limitation for electric school buses is the limited range they can operate between charges. Early models often had a maximum range of between 70 and 90 miles. Recent models have longer ranges, often between 120 and 150 miles; however, pricing for electric schoolbuses varies based on battery capacity and range. These ranges are also highly dependent on the usage and terrain. Other factors affecting the range include the number of stops along the route, driving behavior, and usage of air conditioning and heating. Buses powered by diesel, CNG, or propane all have significantly longer ranges than electric buses.

Schoolbus replacement may be limited by capacity, funding, and geography. Recent school bus replacement programs have received more applications than they could fund. The LAO report states the School Bus Replacement Program administered by the CEC received requests for 1,549 electric buses from 196 districts. The $75 million available for the program funded 236 buses for 63 districts. The Volkswagen Environmental Mitigation Trust received requests for nearly 500 electric buses and the $65 million available for the first round of applications allowed it to fund approximately 80 buses. The Rural School Bus Pilot Project received requests for nearly 600 electric and nonelectric buses and the $62 million available allowed it to fund approximately 180 buses. Urban and suburban districts indicated that replacement with ZEV schoolbuses is feasible. However, rural school districts expressed concerns about the length of their routes and strenuous operating conditions as reasons for not adopting electric buses.

Recommended committee amendments. Due to concerns regarding funding, range, infrastructure, and costs regarding implementation of ZEV schoolbuses by 2035, ***staff recommends that the bill be amended to***:

- Amend "school district" to "LEA."

- Remove the provision that requires that schoolbuses in operation must be ZEV by 2035. Due to the cited concerns, having 100 percent of California's schoolbus fleet by 2035 is not feasible particularly for rural school districts. Allowing some school districts to have a non-ZEV schoolbuses exception would be necessary to keep their existing transportation services operational.

- Adds flexibility for LEAs that are geographically-constrained wherein a ZEV does not meet the transportation and infrastructure demands of the LEA

Some school districts that are larger and well-funded are able to quickly adapt to a change in fleet. This bill does not address the needs of smaller school districts that are not able to comply within the time frame risk being stuck with older diesel buses because they cannot afford a new electric bus. Additionally, urban and suburban have more options regarding contractors that will able to fulfill transportation needs of a school district.

Arguments in support. The World Resources Institutes states, "Diesel exhaust from school buses is a known carcinogen that is linked to reduced lung development in children, respiratory diseases, and negative impacts on cognition, affecting students' abilities to succeed in the classroom. Electric school buses are a healthier solution for students and bus drivers as they produce no tailpipe emissions. Moreover, students from historically underserved communities often rely more heavily on school bus transportation while also experiencing the highest levels of air pollution, so taking steps to electrify the state's school bus fleet has the potential to address historic inequities. Moreover, through pairings with renewable energy and storage, electric school buses can also support a transition to a cleaner energy grid while increasing resiliency."

Related legislation. AB 33 (Ting), Chapter 226, Statutes of 2021, requires the CEC to provide grants and loans to local governments and public institutions to maximize energy use savings, expand installation of energy storage systems, and expand the availability of electric vehicle charging infrastructure, including technical assistance, demonstrations, and identification and implementation of cost-effective energy efficiency, energy storage, and electric vehicle charging infrastructure measures and programs in existing and planned buildings or facilities.

AB 841 (Ting), Chapter 372, Statutes of 2020, requires the PUC to approve specified pending transportation electrification vehicle charging applications by electric IOUs, including an application that has yet to be filed. This bill also makes changes to allow electric IOUs to more easily recover costs from electric ratepayers for the deployment of transportation electrification vehicle charging infrastructure and require specified training certification for any state funded or authorized funding for EV charging infrastructure. This bill also establishes a stimulus program at the CEC to fund appliance, plumbing and heating, ventilation, and air conditioning (HVAC) upgrades to LEAs using ratepayer funded energy efficiency incentives.

AB 1418 (Chiu) of the 2019-20 Session would have required the PUC to assess if the applications filed by an electrical corporation regarding transportation electrification provide sufficient resources to achieve a 100% shift to zero emissions for schoolbuses in that electrical corporation's territory. The bill would have required the PUC, if the PUC makes a determination that more needs to be done to support the advancement to 100% zero-emission schoolbuses, to direct electrical corporations to file additional applications to provide sufficient electrical charging infrastructure for the transformation of schoolbuses away from diesel, gasoline,

propane, and natural gas combustion to zero-emission options. This bill was held in the Assembly Utilities and Energy Committee.

SB 1403 (Lara), Chapter 370, Statues of 2018, mandates the CARB to include a 3-year investment strategy for zero- and near-zero-emission heavy-duty vehicles and equipment commensurate with meeting certain goals and require the funding plan to include information related to milestones achieved by the state's schoolbus incentive programs and the projected need for funding.

AB 1082 (Burke), Chapter 637, Statutes of 2017, authorizes an electrical corporation to file with the PUC, by July 30, 2018, a pilot program proposal for the installation of vehicle charging stations at school facilities and other educational institutions, giving priority to school facilities and other educational institutions located in disadvantaged communities.

SB 110 (Committee on Budget and Fiscal Review), Chapter 55, Statutes of 2017, re-established the Clean Energy Job Creation Program at the CEC to reallocate unspent Proposition 39 funds to finance energy efficiency and renewable energy upgrades at LEAs. The bill also established a program to replace and retrofit diesel schoolbuses to reduce emissions from these vehicles.

SB 350 (de León), Chapter 547, Statutes of 2015, required greenhouse gas reduction targets to be achieved by 2030 through a variety of measures, including supporting electrification of the transportation system and established requirements of the CPUC in adopting EV charging proposals from the IOUs.

SB 1275 (de León), Chapter 530, Statutes of 2014, established the Charge Ahead California Initiative, administered by the CARB, in consultation with the California Air Commission, air pollution control and air quality management districts, and the public. Specifies that the goals of the initiative is to, among other things, place in service at least one million zero-emission vehicles by January 1, 2023, and to increase access for disadvantaged, low-income, and moderate-income communities and consumers.

SB 1204 (Lara), Chapter 524, Statutes of 2014, created the Clean Truck Program to fund development, demonstration, pre-commercial pilot, and early commercial deployment of zero- and near-zero-emission truck, bus, and off-road vehicle and equipment technologies.

REGISTERED SUPPORT / OPPOSITION:

Support

Advanced Energy Economy (sponsor)
American Lung Association in California
Amply Power
California Environmental Voters
California Nurses for Environmental Health and Justice
California Public Interest Research Group
Center for Climate Change and Health
Central California Asthma Collaborative
Los Angeles Business Council
Nextgen California
Physicians for Social Responsibility - San Francisco Bay Area Chapter

Public Health Institute
Regional Asthma Management and Prevention
World Resources Institute

Opposition

None on file

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