United States Government Accountability Office

Report to the Chairman, Committee on Environment and Public Works, U.S. Senate

June 2025

DIESEL SCHOOL BUS ALTERNATIVES

Opportunities to Better Assess Progress of Federal Programs

GAO-25-106887

GAO Highlights

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Highlights of GAO-25-106887, a report to the Chairman, Committee on Environment and Public Works, U.S. Senate

Why This Matters

Federal law has provided over $5 billion for programs, such as the U.S. Environmental Protection Agency's (EPA's) Clean School Bus program, that have helped fund the replacement of diesel school buses with less polluting buses. EPA reports high demand for the programs, which have helped fund nondiesel buses in school districts across the country. However, implementation of multiple federal programs raises questions about overlap and potential related inefficiencies.

GAO Key Takeaways

EPA and the U.S. Department of Energy (DOE) have helped fund nondiesel school buses through four programs—three in EPA and one in DOE. EPA's programs provide grants, rebates, or loans to help pay for less polluting school buses, such as those fueled by propane or electricity. DOE's program has offered grants for energy improvements, including certain school buses. Funding for the four programs is fragmented and programs overlap, but EPA and DOE have coordinated their efforts and taken other steps to address this.

EPA has committed to pay over $3 billion for grants and rebates for new buses from fiscal years 2022 to 2024. Award recipients have encountered some difficulties deploying new buses, such as delays installing electric bus infrastructure.

EPA collects information to track progress toward program goals, such as emission reductions, but has opportunities to better assess progress. For the Clean School Bus rebates program, EPA does not systematically collect complete information to track factors, such as infrastructure delays, that may hinder deployment of new buses. Further, developing a methodology that generates more complete estimates of emissions from funded buses could help EPA assess the extent to which the programs help reduce emissions.

Examples of Nondiesel School Buses

Propane school bus and fueling station (top); electric school bus and charging station (bottom).

Source: GAO. | GAO-25-106887

How GAO Did This Study

We analyzed relevant laws, federal documents, and federal grants and rebate data from fiscal years 2019 to 2024. We compared elements of the four programs. We interviewed officials from EPA and DOE as well as stakeholders with expertise in transportation or air policy. We also conducted site visits to eight school districts selected for geographic diversity and types of buses funded.

What GAO Recommends

We are making two recommendations to EPA: (1) to gather information to verify deployment of rebate-funded buses; and (2) to develop a methodology for more complete estimates of emission reductions from its programs. EPA generally agreed with the recommendations.

For more information, contact: J. Alfredo Gómez at gomezj@gao.gov.

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Abbreviations

ARP	American Rescue Plan Act of 2021
DERA	Diesel Emissions Reduction Act
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
GVWR	Gross Vehicle Weight Rating
IIJA	Infrastructure Investment and Jobs Act
IRA	Inflation Reduction Act of 2022
Joint Office	Joint Office of Energy and Transportation
MOVES	Motor Vehicle Emission Simulator
NCES	National Center for Education Statistics
OIG	EPA's Office of the Inspector General

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

June 27, 2025

The Honorable Shelley Moore Capito
Chairman
Committee on Environment and Public Works
United States Senate

Dear Chairman Capito:

The Infrastructure Investment and Jobs Act and other statutes have provided billions of dollars in appropriations to incentivize school districts and other entities to replace existing school buses with less polluting buses fueled by, for example, electricity, propane, or compressed natural gas. In particular, the Infrastructure Investment and Jobs Act appropriated a total of $5 billion from fiscal year (FY) 2022 through FY2026 to the U.S. Environmental Protection Agency (EPA) for the Clean School Bus program. EPA's Clean School Bus program provides grants and rebates to replace existing school buses with buses fueled by electricity and propane, among other alternative fuels. The Infrastructure Investment and Jobs Act also appropriated a total of $500 million from FY2022 through FY2026 for the U.S. Department of Energy (DOE) to administer grants for energy improvements at public school facilities, including the purchase of alternative fueled buses and other vehicles.

In addition, the Inflation Reduction Act of 2022 appropriated a total of $1 billion from FY2022 through FY2031 for EPA's Clean Heavy-Duty Vehicles program, which offers grants to subsidize the purchase of certain zero-emission heavy-duty vehicles, including eligible school buses.[1] Finally, Congress has appropriated varying funding levels from FY2008 through FY2024 for EPA's Diesel Emissions Reduction Act (DERA) program, which has funded school bus replacements and other actions to reduce diesel emissions. For example, EPA's annual

[1]The Clean Heavy-Duty Vehicles program defines a "zero-emission vehicle" as a vehicle that produces zero exhaust emissions of air pollutants listed under Section 108(a) of the Clean Air Act or greenhouse gases. 42 U.S.C. § 7432(d)(5). EPA regulations define classes of vehicles based on gross vehicle weight rating (GVWR) and define a "heavy-duty vehicle" as any motor vehicle that has a GVWR above 8,500 pounds. 40 C.F.R. § 1037.801. The statute defines eligible vehicles for the grant program as Class 6 or Class 7 heavy-duty vehicles (i.e., between 19,500 pounds and 33,000 pounds GVWR). 42 U.S.C. § 7432(d)(3). The agency's Notice of Funding Opportunity specifies additional criteria for heavy-duty vehicles eligible for funding based on the statutory requirements.

appropriations from FY2020 through FY2024 included funds for DERA ranging from $87 million (FY2020) to $100 million (FY2023).[2]

According to available data, our nation's school bus fleet relies primarily on diesel engines that provide durability but also emit pollutants—such as nitrogen oxides and fine particulate matter—that can degrade air quality and harm public health.[3] Diesel engines also emit carbon dioxide, a greenhouse gas that contributes to climate change. EPA regulates air pollution from newly manufactured vehicles, including school buses, and engines. The regulations do not, however, retroactively apply to school buses and other vehicles already in use, known as legacy vehicles. Legacy diesel vehicles can operate for decades and emit higher levels of nitrogen oxides, fine particulate matter, and other pollutants in exhaust than newer models, according to an EPA report for Congress.[4] Replacing legacy school buses with less polluting school buses may help to protect public health, according to EPA.

The programs established under the Infrastructure Investment and Jobs Act and the Inflation Reduction Act of 2022 have garnered support from school districts, state agencies, and other stakeholders, but also raised questions about implementation and potential fragmentation, overlap, and duplication among federal programs. Fragmentation refers to those circumstances in which more than one federal agency is involved in the same broad area of national need. Overlap occurs when multiple agencies or programs have similar goals, engage in similar activities or

[2]Other statutes, such as the American Rescue Plan Act of 2021 and the Inflation Reduction Act of 2022, provided supplemental appropriations for the DERA program. *See* American Rescue Plan Act of 2021, Pub. L. No. 117-2, § 6002(a)(1)(D), 135 Stat. 4, 93; Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 60104(a), 36 Stat. 1818, 2067.

[3]World Resources Institute, *The Electric School Bus Data Dashboard*, https://electricschoolbusinitiative.org/electric-school-bus-data-dashboard. The World Resources Institute (WRI) has compiled data about school bus use as part of its efforts to support electrification of the U.S. school bus fleet. WRI's Dashboard is based on a dataset that contains data collected from 46 states and the District of Columbia. The data provided by the states were current as of different points of time, ranging from 2018 to 2023. The dataset is missing data from four states (Colorado, Hawaii, Louisiana, and New Hampshire) and all U.S. territories (Guam, Puerto Rico, U.S. Virgin Islands, Northern Mariana Islands, and American Samoa). For discussion of the dataset and its limitations, see L. Lazer, L. Freehafer and J. Wang, *Dataset of U.S. School Bus Fleets* (Washington, D.C.: May 2024), https://doi.org/10.46830/writn.22.00076.

[4]EPA, *EPA Clean School Bus Program, Fourth Report to Congress, Fiscal Year 2024*, EPA-420-R-24-004 (January 2025).

strategies to achieve them, or target similar beneficiaries.[5] Duplication occurs when two or more agencies or programs are engaged in the same activities or provide the same services to the same beneficiaries.[6]

Additionally, the EPA's Office of the Inspector General (OIG) has audited the management of Clean School Bus program funds. In July 2024, EPA's OIG reported that EPA followed six of the seven requirements for selecting Clean School Bus funding recipients but found that the agency did not have sufficient internal controls to ensure recipients were eligible for school buses.[7]

You asked us to review the implementation of federal programs that fund nondiesel school buses—those fueled by alternatives to diesel—and issues related to potential fragmentation, overlap, and duplication.[8] This report examines (1) key federal programs that help fund nondiesel school buses and how agencies implement them; (2) the extent to which fragmentation, overlap, and duplication exist among federal funding and key programs and any steps federal agencies have taken to address fragmentation, overlap, and duplication; and (3) the extent to which agencies track the performance of the key programs.

To examine key federal programs that help fund nondiesel school buses and how agencies implement them, we analyzed relevant laws and federal documents, including Notices of Funding Opportunities, and searched for congressionally directed spending. We defined a key federal program as one that either expressly aims to provide grants, rebates, or loans to help fund nondiesel school buses, or that provided grants, rebates, or loans to help fund nondiesel buses for more than five school

[5]GAO, *2024 Annual Report*: *Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Billions of Dollars in Financial Benefits*, GAO-24-106915 (Washington, D.C.: May 15, 2024).

[6]GAO-24-106915.

[7]The EPA's OIG recommended, among other things, that EPA take action to improve the Clean School Bus program's internal controls for selecting funding recipients. EPA Office of Inspector General, *The EPA Needs to Improve Internal Controls for Selecting Recipients of Clean School Bus Program Funds*, Report No. 24-E-0050 (Washington, D.C.: July 31, 2024).

[8]Terminology for this group of vehicles varies by program and includes "alternative fueled vehicle," "clean school bus," "low-emissions vehicle," and "zero-emission vehicle." For purposes of this report, we refer to the buses eligible for federal funding as "nondiesel buses."

districts from FY2019 through FY2023.[9] To ensure that we identified all key federal programs, we interviewed federal officials from EPA, DOE, the U.S. Department of Transportation, the Joint Office of Energy and Transportation (Joint Office), and nine stakeholders with expertise in transportation or air quality policy.

To identify potential stakeholders, we compiled a list of organizations with expertise in transportation or air quality policy, representing a variety of organization types (e.g., industry/trade associations or research organizations) and experience with federal programs. We selected a nongeneralizable sample of nine stakeholders from this list for interviews based on their experience with nondiesel school buses and federal funding programs. We also conducted site visits to eight school districts in three U.S. Census regions to observe program implementation and obtain perspectives of stakeholders applying for funding. Findings from our sample of school districts selected to receive awards (federal awardees) that we visited are nongeneralizable to all federal awardees.

To examine the extent to which fragmentation, overlap, and duplication exists among federal funding and key programs and any steps federal agencies have taken to address fragmentation, overlap, and duplication, we applied GAO's evaluation guide.[10] Specifically, we reviewed legal requirements, program documents, Notices of Funding Opportunities, and interviewed EPA and DOE officials to identify program elements. We compared the similarities and differences among the program elements and evaluated how the programs related to each other. We also interviewed officials at EPA and DOE, which are the two agencies implementing key programs discussed in this report, to determine the extent to which agencies coordinate the programs.

To assess the extent to which the agencies track the performance of key programs, we analyzed program documentation and interviews with officials from both agencies. We examined how agencies track progress toward the program goals identified through our analysis of fragmented funding and overlapping programs. We also identified performance measures of progress toward program goals through documentation, such as Notices of Funding Opportunity and reporting templates that the

[9]Fiscal years 2019 through 2023 represented the most recent and complete 5 fiscal years at the time of our analysis.

[10]GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, GAO-15-49SP (Washington, D.C.: Apr. 14, 2015).

agencies use to monitor recipient use of federal funds. To identify opportunities to enhance agencies' assessment of program performance, we reviewed GAO's guide to evidence-based policymaking, which identifies 13 key practices for managing and assessing the results of federal programs and applied selected key practices to our analysis.[11] Specifically, we compared selected key practices to our assessment of how agencies track progress toward program goals. See appendix I for a more detailed discussion of our scope and methodology.

We conducted this performance audit from June 2023 to June 2025 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Types of Buses in the Nation's School Bus Fleet

Roughly 500,000 school buses transport students in the United States and rely primarily on diesel fuel, according to available data.[12] EPA reported that many of the diesel school buses in use predate EPA's recent federal emission standards for heavy duty vehicles.[13]

Fossil fuels other than diesel, such as propane, gasoline, and compressed natural gas, are also used to power school buses. According

[11]GAO, *Evidence-Based Policymaking: Practices to Help Manage and Assess the Results of Federal Efforts*, GAO-23-105460 (Washington, D.C.: July 12, 2023).

[12]World Resources Institute, *The Electric School Bus Data Dashboard.* As previously noted, the World Resources Institute's Dashboard is based on a dataset that contains data from 46 states and the District of Columbia. The dataset is missing data from four states (Colorado, Hawaii, Louisiana, and New Hampshire) and all U.S. territories (Guam, Puerto Rico, U.S. Virgin Islands, Northern Mariana Islands, and American Samoa). For discussion of the dataset, see L. Lazer, L. Freehafer and J. Wang, *Dataset of U.S. School Bus Fleets*.

[13]EPA, *EPA Clean School Bus Program, Fourth Report to Congress.* In addition, according to the World Resources Institute's dataset, at least 23 percent of school buses predate the 2010 federal emission standards. WRI's dataset includes data from 46 states and the District of Columbia, and has limitations. For example, WRI's dataset shows that 8 percent of the buses in the dataset are missing age data. L. Lazer, L. Freehafer and J. Wang, *Dataset of U.S. School Bus Fleets.*

to a 2019 report, about 6 percent of school buses sold in 2017 ran on propane and 1 percent used compressed natural gas.[14]

Electric school buses account for about 1 percent of the U.S. bus fleet, according to available data.[15] The rate of electric school bus deployment has increased in recent years. According to the World Resources Institute, the number of electric school buses in use rose from 87 buses in 2017 to 911 in 2021, a 10-fold increase.[16] In 2022, the number of new electric buses in use increased to 2,693, more than doubling the number of electric buses in use from the prior year.[17]

Bus pricing depends on various factors, including fuel type and bus capacity.[18] For example, a 2025 study on school bus pricing reported manufacturer's suggested retail price (MSRP) for a new diesel school bus that ranged from $98,000 to $154,000, depending on the bus capacity.[19] The MSRP for new electric school buses ranged from $300,000 to $440,000, depending on bus size.[20] A 2019 market study reported that a

[14]Phillip Burgoyne-Allen and Bonnie O'Keefe, *From Yellow to Green: Reducing School Transportation's Impact on the Environment* (Bellwether Education Partners, 2019).

[15]World Resources Institute, *The Electric School Bus Data Dashboard*. As previously noted, WRI's Dashboard is based on a dataset that is missing data from four states (Colorado, Hawaii, Louisiana, and New Hampshire) and all the U.S. territories (Guam, Puerto Rico, U.S. Virgin Islands, Northern Mariana Islands, and American Samoa). For discussion of the dataset, see L. Lazer, L. Freehafer and J. Wang, *Dataset of U.S. School Bus Fleets*.

[16]World Resources Institute, *The Electric School Bus Data Dashboard*.

[17]World Resources Institute, *The Electric School Bus Data Dashboard*.

[18]The school bus industry defines four basic types of school buses. Types A and B are comparatively small in size, while types C and D are comparatively large in size. Type C school buses are most common, representing 70 percent of school bus sales in 2014. *See* GAO, *School Bus Safety: Crash Data Trends and Federal and State Requirements*, GAO-17-209 (Washington, D.C.: Jan. 12, 2017), 4.

[19]The 2022 MSRP of a new Type C diesel school bus is $131,000, according to one study. *See* M. Levinson, P. Burgoyne-Allen, A. Curran, A. Achury, and E. Werthmann, *Recommended Total Cost of Ownership Parameters for Electric School Buses: Summary of Methods and Data* (Washington, D.C.: World Resources Institute, 2025), 4.

[20]M. Levinson, P. Burgoyne-Allen, A. Curran, A. Achury, and E. Werthmann, *Recommended Total Cost of Ownership Parameters for Electric School Buses,* 4. Also, our prior work found that zero-emission buses (e.g., electric buses) are generally substantially more expensive than diesel buses. *See* GAO, *Transit Workforce Development: Actions to Support Transition to Zero-Emission Buses*, GAO-25-106921 (Washington, D.C.: Nov. 18, 2025), 5.

new propane school bus may cost about $110,000 to $115,000, and a new compressed natural gas bus about $125,000 to $130,000.[21]

Air Pollution from Diesel School Buses

Diesel-powered school buses emit pollutants, such as nitrogen oxides, that can degrade air quality and harm public health. Nitrogen oxides also react with other chemicals in the air to form both particulate matter and ozone.[22] A large body of scientific evidence has linked exposure to particulate matter to serious health problems, including asthma, chronic bronchitis, heart attack, and premature death. Ozone can also cause respiratory illnesses, decreased lung function, and increase risk of premature death from heart or lung disease. Additionally, diesel engines emit carbon dioxide, a greenhouse gas that contributes to climate change.

According to a 2022 EPA report for Congress, children are particularly vulnerable to air pollution from diesel school buses because their lungs have not fully developed and they have faster breathing rates than adults.[23] More specifically, EPA has reported that exposure to these pollutants increases children's risk of asthma and other respiratory illness, which have been linked to students missing school.[24]

Starting in the mid-1970s, EPA established progressively more stringent emissions standards to limit the emissions of certain pollutants from newly manufactured vehicles and engines, including school buses. The most stringent standards generally apply to diesel engines and vehicles built after 2007. For example, starting with vehicle model year 2007, federal standards represented a 90 percent reduction in particulate matter from most newly manufactured heavy-duty diesel engines, including school buses, compared to the levels permitted under the prior

[21]Estimates reported for new Class C school buses. Atlas Public Policy, *Electric Trucks and Buses Overview: The State of Electrification in the Medium- and Heavy-Duty Vehicle Industry* (Washington, D.C.: Atlas Public Policy, 2019).

[22]Particulate matter is a mixture of solid particles and liquid droplets in the air that are so small that they can be inhaled and cause serious health problems. Ozone is a gas formed through chemical reactions in the atmosphere, primarily from emissions, such as vehicle exhaust and can adversely affect human health when inhaled.

[23]EPA, *Diesel Emissions Reduction Act (DERA) Fifth Report to Congress*, EPA-420-R-22-021 (August 2022).

[24]EPA, *Diesel Emissions Reduction Act (DERA) Fifth Report to Congress* and EPA, *2023 Clean School Bus (CSB) Grant Program: Notice of Funding Opportunity*, EPA-OAR-OTAQ-23-06 (April 2023).

standard.[25] EPA phased in additional standards limiting nitrogen oxides and other diesel emissions from vehicle model years 2007 through 2010. The latest federal emissions standards for newly manufactured heavy-duty vehicles, including school buses, will start with vehicle model year 2027.[26]

Resources for Deployment of Nondiesel School Buses

A variety of financial and technical assistance programs offer incentives and support for school districts to deploy nondiesel vehicles, including electric school buses. Federal funding accounts for the largest fraction of funding incentives. In addition to the federal grant and rebate programs discussed later in this report, state programs, and private sector sources, such as a utility program that helps schools set up the infrastructure for charging electric vehicles, provide support for the deployment of nondiesel school buses.

Federal tax credits for electric vehicles and charging infrastructure are also available to school districts and other tax-exempt entities through the Inflation Reduction Act of 2022 and implemented by the Internal Revenue Service. For example, school districts could be eligible for the Qualified Commercial Clean Vehicle (Section 45W) and Alternative Fuel Refueling Property (Section 30C) tax credits.[27] The Section 45W tax credit provides up to $40,000 for qualified commercial clean vehicles, such as electric school buses. The Section 30C tax credit provides up to $100,000 for qualified charging and refueling infrastructure, for example, in low-income and nonurban areas.

Finally, two of the settlement agreements between Volkswagen corporations and the U.S. government are other sources of funds that

[25]*See* Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, 66 Fed. Reg. 5002 (Jan. 18, 2001).

[26]In 2024, EPA finalized a rule that phases in more stringent greenhouse gas emission limits for heavy-duty vehicles, including school buses, over model years 2027 through 2032. *See* Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3, 89 Fed. Reg. 29440 (Apr. 22, 2024). In 2023, EPA published a rule to further limit nitrogen oxides and other air pollutants from heavy-duty vehicles, including school buses, starting with model year 2027. *See* Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, 88 Fed. Reg. 4296 (Jan. 24, 2023). On March 12, 2025, EPA announced that it was reconsidering these two rules.

[27]Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 13403, 36 Stat. 1818, 1964 (amending 26 U.S.C. § 45W); § 13404, 36 Stat. 1818, 1966 (amending 26 U.S.C. § 30C).

have supported the deployment of nondiesel school buses.[28] The settlement agreements required Volkswagen to provide nearly $3 billion for an environmental mitigation trust to fund projects that reduce nitrogen oxides from heavy-duty sources, among other eligible mitigation actions.[29] The trust has funded the replacement of diesel school buses with less polluting buses, among other things.

Fragmentation, Overlap, and Duplication Among Federal Programs

In February 2010, GAO was statutorily mandated to identify and report annually to Congress on federal programs, agencies, offices, and initiatives—either within departments or government-wide—that have duplicative goals or activities.[30] In related work, GAO reported that executive branch agencies and Congress can improve the efficiency of such federal programs by maximizing the level of services provided for a given level of resources and improving programs' effectiveness.[31] In addition, opportunities to take action exist in areas where federal programs are inefficient or ineffective because they are fragmented, overlapping, or duplicative. However, having multiple agencies or entities involved in the same programmatic or policy area can, in some cases, be appropriate or beneficial due to the complex nature or magnitude of the federal effort.

[28]Various consent decrees and settlement agreements resolved lawsuits alleging that Volkswagen AG, Audi AG, Volkswagen Group of America, Inc., and other parties (collectively "Volkswagen") violated the Clean Air Act and other federal and state laws when they sold diesel motor vehicles equipped with computer software designed to cheat on federal emissions tests. *See* Order Granting the United States' Motion to Enter Proposed Amended Consent Decree, *In re* Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 (N.D. Cal. Oct. 25, 2016).

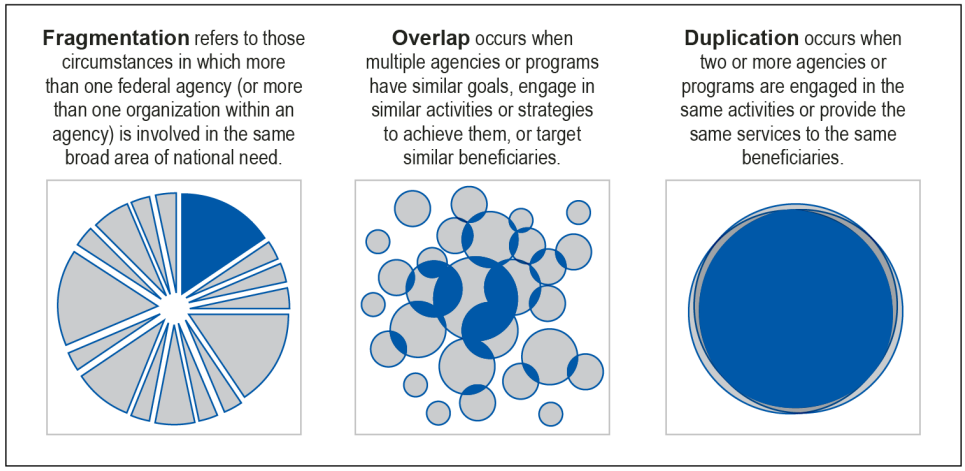
[29]The settlement agreements between the Department of Justice and Volkswagen required Volkswagen to provide $2.7 billion for the 2.0-liter violating engines and $225 million for the 3.0-liter violating engines to an environmental mitigation trust to fund eligible mitigation actions that reduce excess nitrogen oxide emissions from the violating vehicles, among other requirements. *See* Order Granting the United States' Motion to Enter Proposed Amended Consent Decree, *In re* Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 (N.D. Cal. Oct. 25, 2016); Order Granting the United States' Motion to Enter Second Partial Consent Decree, *In re* Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 (N.D. Cal. May 17, 2017). *See also* EPA, *Frequently Asked Questions (FAQ) For Beneficiaries to the Volkswagen Mitigation Trust Agreements* (Washington, D.C.: August 2022).

[30]Pub. L. No. 111-139, § 21, 124 Stat. 8, 29 (2010) (codified at 31 U.S.C. § 712 note).

[31]GAO-15-49SP, 2.

Figure 1 provides definitions for the terms fragmentation, overlap, and duplication as used in this report.

Figure 1: Definitions of Fragmentation, Overlap, and Duplication

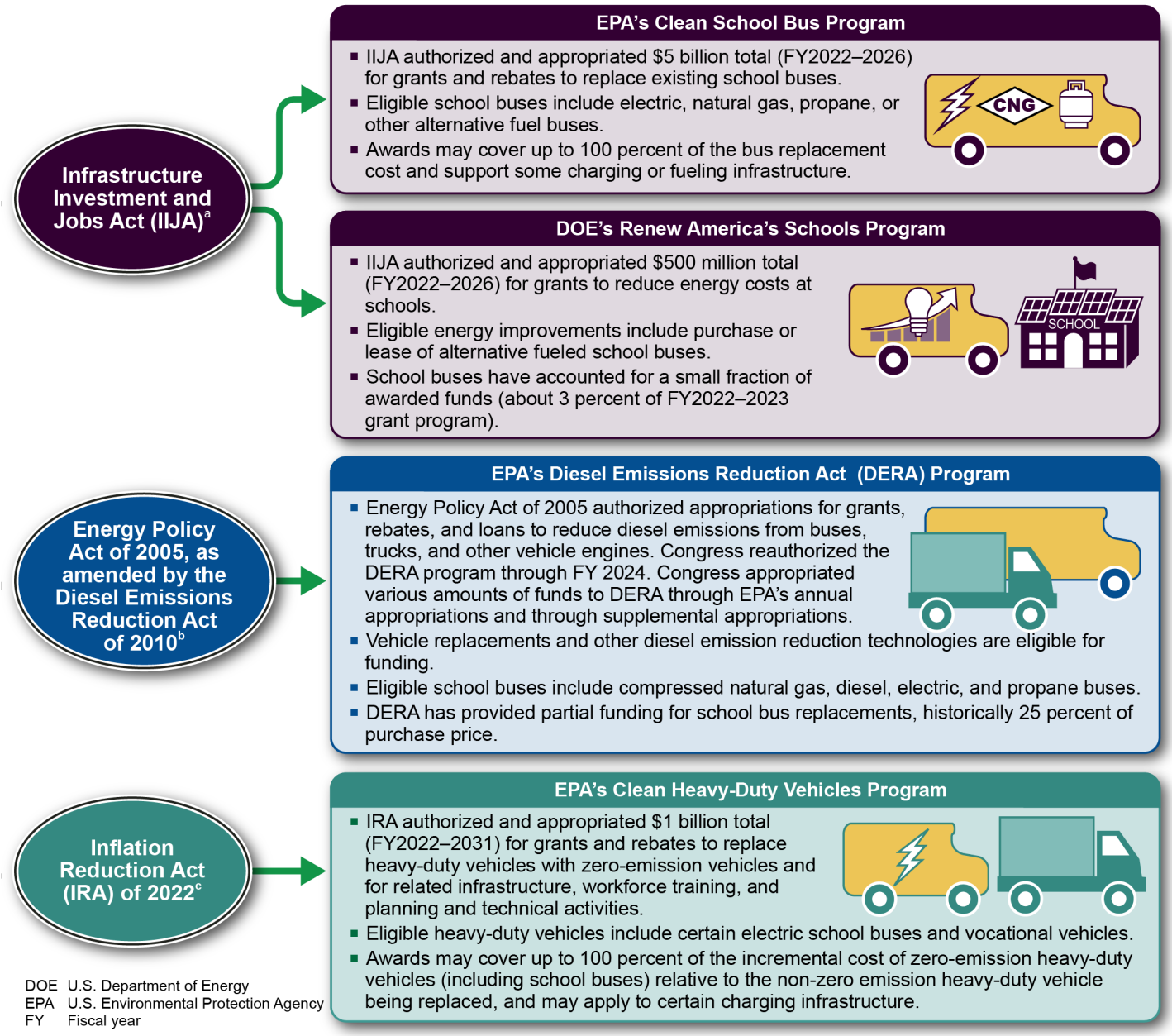


Source: GAO; GAO icons. | GAO-25-106887

Four Key Federal Programs Help Fund Nondiesel School Buses

Four key federal programs—three at EPA and one at DOE—provide grants, rebates, and loans for nondiesel school buses, as shown in figure 2. EPA's Clean School Bus program is the only federal program dedicated to replacing existing school buses. EPA's Diesel Emissions Reduction Act (DERA) program helps fund grants and rebates for activities to reduce diesel emissions, with school bus replacements and retrofits constituting the largest segment of funded projects from FY2008 through FY2018. A third EPA program, the Clean Heavy-Duty Vehicles program, provides grants to fund replacements of school buses and vocational vehicles. Finally, DOE's Renew America's Schools Program provides grants for energy improvements at public schools, such as improvements to heating and cooling systems or the purchase of nondiesel school buses.

Figure 2: Statutes Establishing Key Federal Programs That Help Fund Nondiesel School Buses



DOE U.S. Department of Energy
EPA U.S. Environmental Protection Agency
FY Fiscal year

Sources: GAO icons and analysis of legal and program information. | GAO-25-106887

[a]For EPA's Clean School Bus program, see Pub. L. No. 117-58, § 71101, 135 Stat. 429, 1321-1325 (2022) (codified as amended at 42 U.S.C. § 16091); 135 Stat. at 1405 (appropriation for the program). For DOE's Renew America's Schools program, see Pub. L. No. 117-58, § 40541, 135 Stat. 429, 1071-1074 (codified at 42 U.S.C. § 18831); 135 Stat. at 1367 (appropriation for the program).

[b]Energy Policy Act of 2005, Pub. L. No. 109-58, §§ 791-797, 119 Stat. 838-844 (referring to these provisions as "Diesel Emissions Reduction"; codified as amended at 42 U.S.C. §§ 16131-16137). See also Diesel Emissions Reduction Act of 2010, Pub. L. No. 111-364, 124 Stat. 4056 (2011) (amending the diesel emission reduction provisions of the Energy Policy Act of 2005).

[c]Pub. L. No. 117-169, § 60101, 36 Stat. 1818, 2063 (codified at 42 U.S.C. § 7432).

EPA's Clean School Bus Program

Established under the Infrastructure Investment and Jobs Act, EPA's Clean School Bus program is the only federal program dedicated to replacing existing school buses and accounts for the largest share of federal funding available for school bus replacement. The Infrastructure Investment and Jobs Act appropriated a total of $5 billion over 5 fiscal years for grants and rebates to replace existing school buses, with $1 billion available until expended for each fiscal year from FY2022 through FY2026.[32]

As of January 2025, EPA helped fund school bus replacements through two Clean School Bus rebate programs and one Clean School Bus grant program.[33] Specifically, EPA reported that it obligated approximately $2.8 billion under these three programs to replace about 8,900 school buses as of January 2025.[34] According to EPA officials, the Clean School Bus program has resulted in funding for replacement buses in every state. Figure 3 shows the distribution of rebates under the FY2022 and FY2023 Clean School Bus Rebate programs, according to EPA's program documentation.[35]

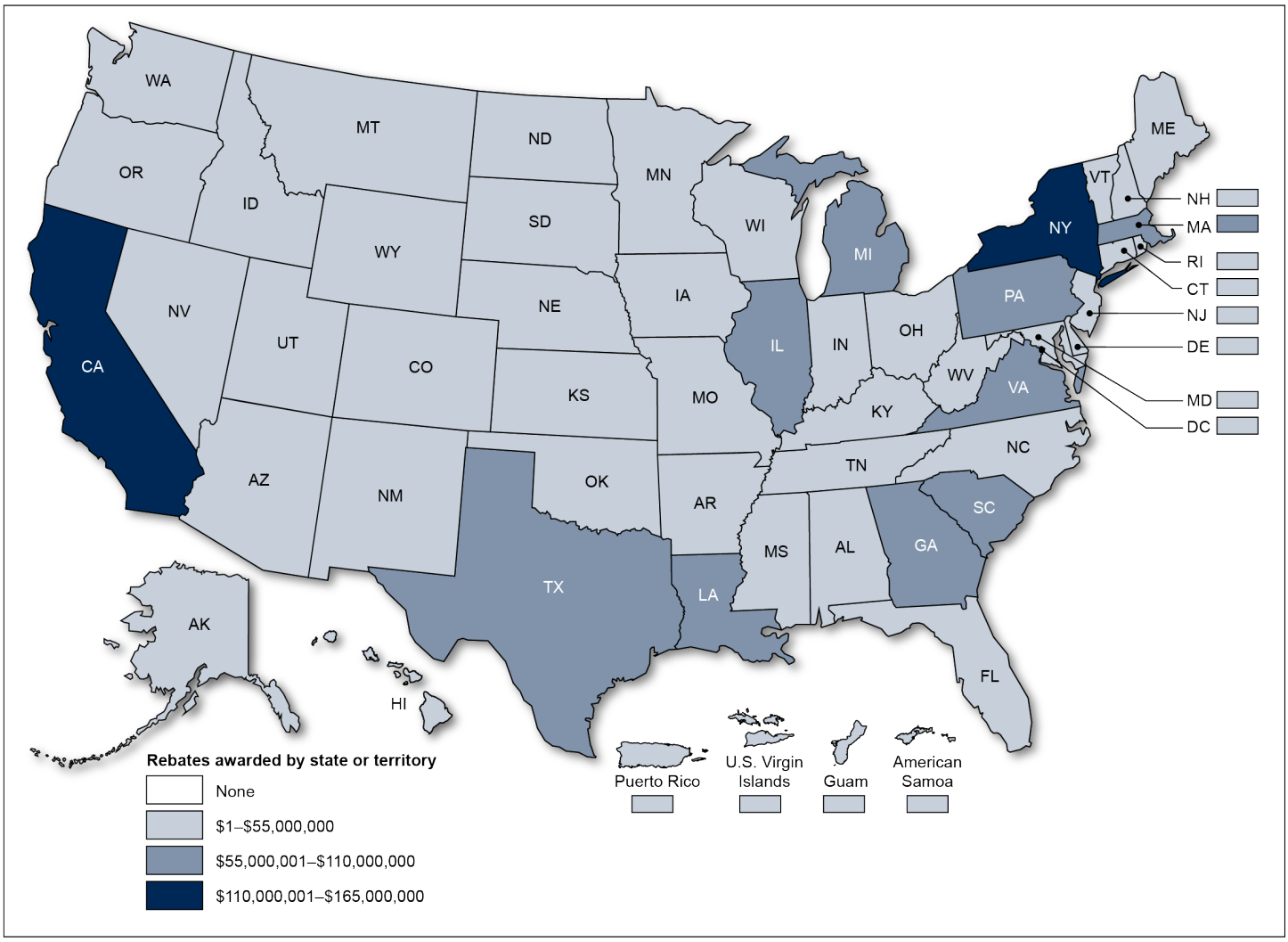
[32]Pub. L. No. 117-58, div. J, tit. VI, 135 Stat. 429, 1405 (appropriation); § 71101, 135 Stat. 429, 1325 (2022) (authorization of appropriation codified at 42 U.S.C. § 16091(f)).

[33]The agency opened a third rebate program, "FY2024 Clean School Bus Rebate Program," that accepted applications through January 9, 2025.

[34]EPA, *2024 Investing in America Report: Progress under The Bipartisan Infrastructure Law & The Inflation Reduction Act*, EPA-190-R-24-004 (January 2025), 40.

[35]Figure excludes distribution of FY2023 Clean School Bus grants because GAO could not determine the breakdown of grant funds at the state level from EPA's data. For example, the grants data from EPA's Clean School Bus Awards website reports funds requested by each grantee, and some grantees planned to use funds for school districts in multiple states.

Figure 3: Clean School Bus Fiscal Year 2022 and 2023 Rebate Programs, Total Rebate Funding by State

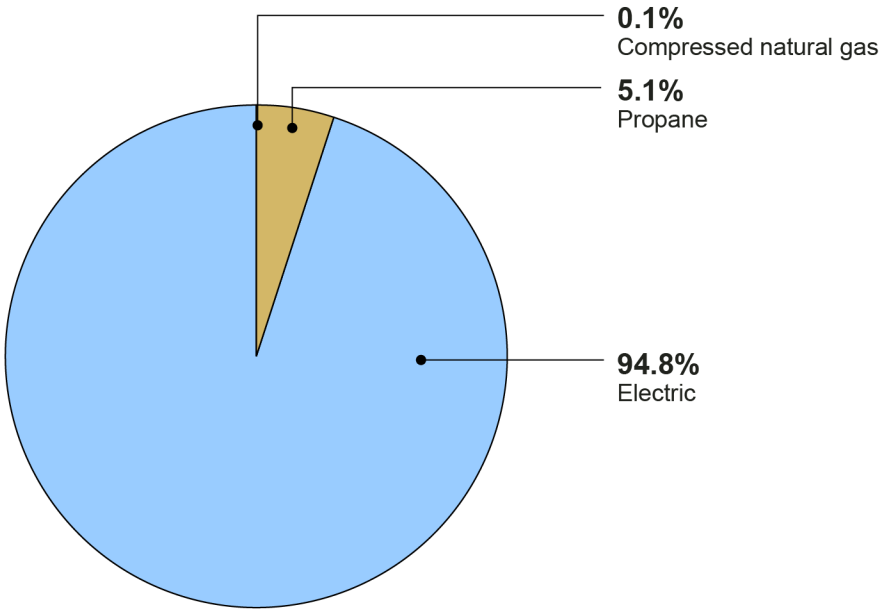


Sources: GAO analysis of U.S. Environmental Protection Agency data; Map Resources (map). | GAO-25-106887

The Infrastructure Investment and Jobs Act directed EPA to award half of the authorized appropriations for zero-emission school buses (e.g., electric school buses) and half of the funds for clean school buses (i.e., buses fueled by compressed natural gas, electricity, propane, or other

alternative fuels).[36] Most of the bus replacement awards were for electric buses, according to EPA's January 2025 Report to Congress (see fig. 4).

Figure 4: School Buses Funded by the U.S. Environmental Protection Agency's (EPA) Clean School Bus Program, by Fuel Type[a]



Source: GAO analysis of EPA data. | GAO-25-106887

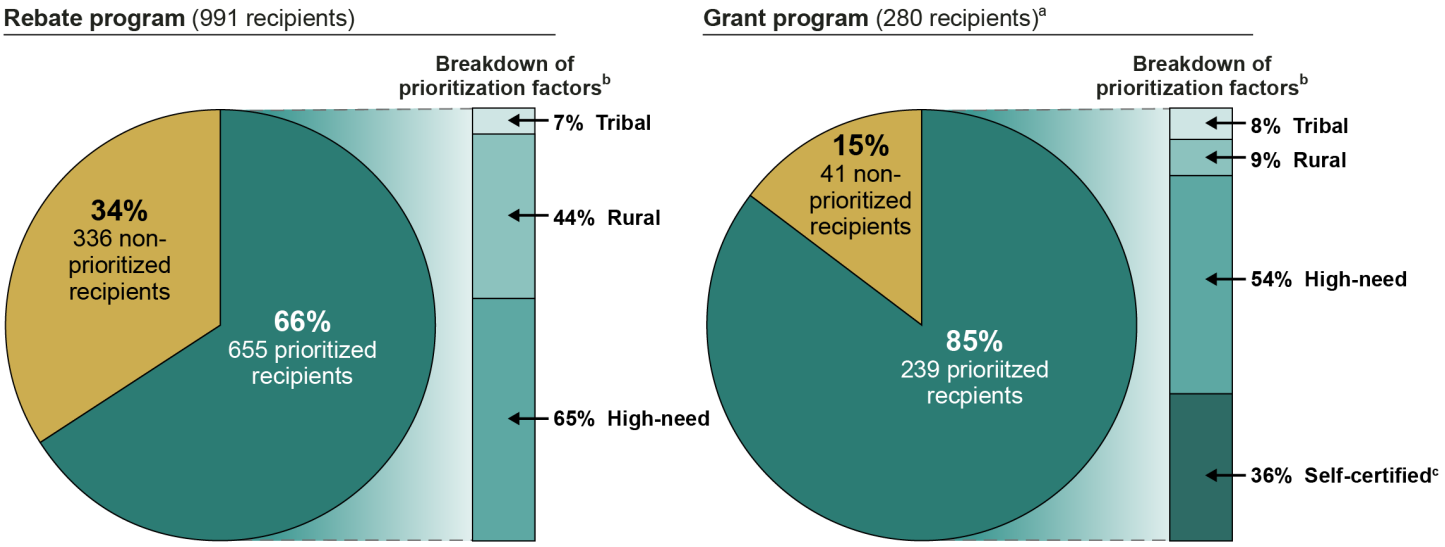
[a]Based on EPA's report to Congress, which reported the number of school buses funded by the Clean School Bus program. Specifically, EPA reported the breakdown of buses from the fiscal year (FY) 2022 and FY2023 Clean School Bus Rebate programs, as of September 2024, and the breakdown of buses requested under the FY2023 Clean School Bus Grant, as of December 2023. See EPA, *EPA Clean School Bus Program, Fourth Report to Congress, Fiscal Year 2024*, EPA-420-R-24-004 (January 2025).

In addition, the Infrastructure Investment and Jobs Act allowed EPA to prioritize applicants that serve rural or low-income areas, high-need local education agencies (e.g., qualifying public board of education), and

[36]The Infrastructure Investment and Jobs Act, which was enacted on November 15, 2021, defines "clean school bus" as a bus operated using compressed natural gas, electric, propane, liquid natural gas, hydrogen, biofuels, or a zero-emission school bus. 42 U.S.C. § 16091(a)(2)-(3). EPA listed compressed natural gas school buses as eligible replacement buses under Clean School Bus funding opportunities but reported in January 2025 that such buses are no longer available in the school bus market. *See* EPA, *EPA Clean School Bus Program, Fourth Report to Congress.* In addition, EPA has not included hydrogen and liquified natural gas school buses as eligible replacement technologies for Clean School Bus funding opportunities, as of September 2024, but the agency stated it will continue to evaluate product offerings for future funding opportunities.

children residing on tribal lands, among other factors.[37] Most grant and rebate award recipients met at least one prioritization criterion (see fig. 5). For example, figure 5 shows that over half of the prioritized rebate recipients met the high-need criterion (65 percent) and just under half of the prioritized rebate recipients met the rural criterion (44 percent). Over half of the prioritized grant recipients also met the high-need criterion (54 percent) though a smaller fraction of prioritized grant recipients met the rural criterion (9 percent). Appendix II provides additional information about key elements of the Clean School Bus program.

Figure 5: Prioritization Status of Recipients of U.S. Environmental Protection Agency's (EPA) Clean School Bus Rebates and Grants



Source: GAO analysis of EPA data. | GAO-25-106887

Rebate data are for awards offered under the fiscal year (FY) 2022 and FY2023 Rebate programs. Grant data are for the grants offered under the FY2023 Grant program.

[a]"Recipients" refer to the school districts receiving grant funds. In some cases, one grant award provided funds to more than one school district.

[b]Sum does not equal 100 percent because some recipients met more than one prioritization factor.

[c]"Self-certified" refers to applicants that self-certified as low-income, an option that EPA offered to applicants to the FY2023 Clean School Bus Grant program if they met certain conditions. See EPA, *2023 Clean School Bus (CSB) Grant Program: Notice of Funding Opportunity*, EPA-OAR-OTAQ-23-06 (April 2023).

The maximum amount of funding that EPA made available for each replacement bus depended on the recipient's prioritization status, type of

[37]42 U.S.C. § 16091(b)(4).

replacement bus, and the size of the replacement bus, according to program documents (see table 1). For example, prioritized applicants were eligible for higher amounts of funding per bus than nonprioritized recipients and the maximum per bus funding made available for electric school buses has exceeded the maximum per bus funding available for compressed natural gas and propane buses.

Table 1: U.S. Environmental Protection Agency's (EPA's) Clean School Bus Fiscal Year 2023 Grant and Fiscal Year 2023 Rebate Programs' Maximum Funding Available Per Bus

	Type of Replacement School Bus		
Funding Source	**Compressed Natural Gas**	**Propane**	**Zero-Emissions**
Grant			
Prioritized recipients	$30,000–$45,000	$30,000–$35,000	$315,000–$395,000
Nonprioritized recipients	$20,000–$30,000	$20,000–$25,000	$195,000–$250,000
Rebate			
Prioritized recipients	$30,000–$45,000	$30,000–$35,000	$265,000–$345,000
Nonprioritized recipients	$20,000–$30,000	$20,000–$25,000	$155,000–$200,000

Source: GAO analysis of EPA documentation. | GAO-25-106887

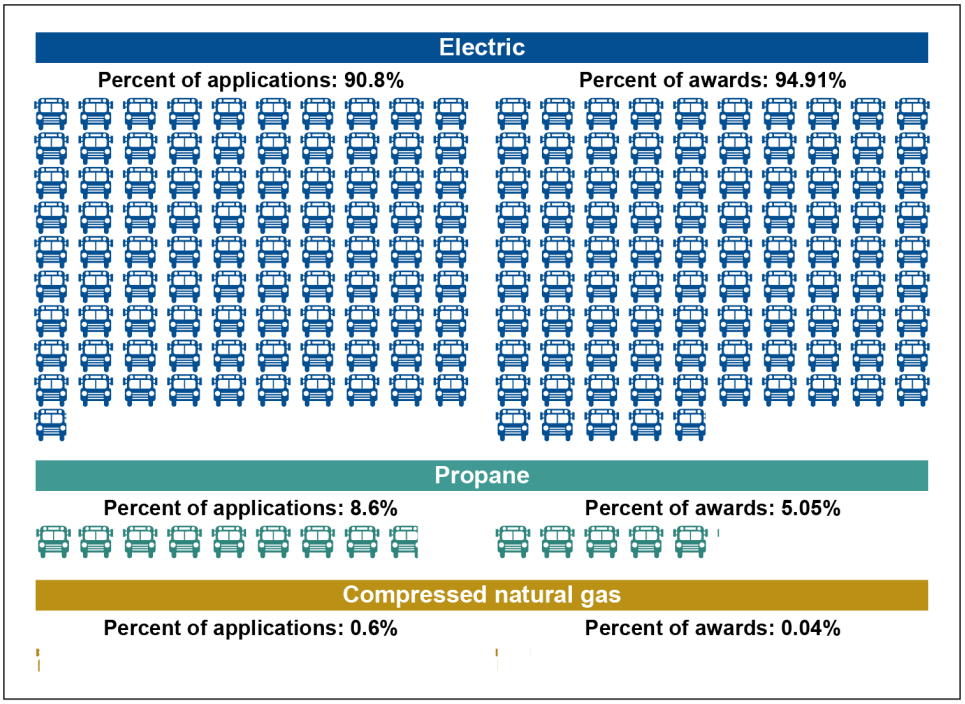
Note: The maximum funding available per bus for each fuel type depends on the recipient's prioritization status and the classification category of the bus, which is based on a gross vehicle weight rating. EPA's classification groups for heavy-duty vehicles range from Class 2b to Class 8, and the gross vehicle weight as determined by the vehicle manufacturer increases from Class 2b to Class 8. 40 C.F.R. § 1037.801. The lower number of each range in this table is the maximum per bus funding level for Class 3–6 buses. The higher number of each range in this table is the maximum per bus funding level for Class 7+ buses.

EPA officials we interviewed told us that the agency set maximum per bus awards at a level high enough that, in the agency's judgment, would incentivize entities to apply for funding without inflating market prices for alternatively fueled school buses. Clean School Bus awards may cover up to 100 percent of the cost of a new electric bus but maximum per bus funding levels for electric buses have decreased in each rebate funding opportunity.[38] EPA lowered the maximum per bus award for electric school buses with the goal to encourage lower market prices such that communities could better afford electric school buses after the Clean School Bus program ends, according to agency officials we interviewed.

[38]EPA made up to $375,000 available per electric bus for the FY2022 Clean School Bus rebate, up to $345,000 per electric bus for the FY2023 Clean School Bus rebate, and up to $325,000 per electric bus for the FY2024 Clean School Bus rebate.

EPA officials we interviewed told us that the vast majority of the applicants requested funding for electric buses and that the percentage of funding awarded by fuel type roughly paralleled the breakdown of the type of buses requested in applications. As an example, figure 6 compares the types of buses requested with the types of buses funded under the FY2022 rebate.

Figure 6: Percent of School Buses Requested and Funded Under the U.S. Environmental Protection Agency's (EPA) Clean School Bus Fiscal Year 2022 Rebate Program, by Fuel Type



Sources: GAO icons and analysis of EPA information. | GAO-25-106887

EPA's Diesel Emissions Reduction Act (DERA) Program

Established in 2005, the Diesel Emissions Reduction Act (DERA) program provides grants, rebates, and loans for activities, including

school bus replacements, to reduce diesel emissions.[39] Numerous types of vehicles and engines, such as school buses, garbage trucks, construction vehicles, and agriculture equipment, are eligible for DERA program funding. EPA has prioritized DERA program funding for projects expected to maximize public health benefits and cost-effectiveness, to serve areas with poor air quality and high population density, and to conserve diesel fuel, among other things. See appendix II for more information about key elements of the DERA program.

The DERA program resulted in the replacement or retrofitting of approximately 73,700 engines or vehicles from FY2008 through FY2018, according to the agency's most recent DERA report to Congress.[40] Congress has continued to reauthorize the DERA program, most recently through FY2024, and has continued to appropriate funds to the program through FY2024. According to EPA officials, the agency obligated about $470 million for the DERA program from FY2019 through March 2025.

The DERA program has historically helped fund vehicle replacements and other vehicle technologies, including retrofits, engine rebuilds, and fuel switching, to reduce diesel emissions from various sources in the transportation sector. The replacement of school buses and other vehicles has accounted for an increasing percentage of DERA program-funded projects over time, according to EPA officials.[41] According to EPA's Fifth Report to Congress, school buses constituted the largest segment (43%) of projects funded by the DERA program from FY2008 through FY2018. DERA program funds have also supported projects

[39]Energy Policy Act of 2005, Pub. L. No. 109-58, §§ 791-797, 119 Stat. 838-844 (referring to these provisions as "Diesel Emissions Reduction"; codified as amended at 42 U.S.C. §§ 16131-16137). *See also* Diesel Emissions Reduction Act of 2010, Pub. L. No. 111-364, 124 Stat. 4056 (2011) (amending the diesel emission reduction provisions of the Energy Policy Act of 2005). For the purposes of this report, we refer to the diesel emission reduction provisions of the Energy Policy Act of 2005 as amended by the Diesel Emissions Reduction Act of 2010 and other statutes as the "DERA program." The Energy Policy Act of 2005 as amended authorizes EPA to administer grants, rebates, and loans, but the agency does not currently implement a loan program, according to agency officials. EPA administered a DERA loan program from FY2008 through FY2010, according to EPA's Third Report to Congress. EPA stated that it did not plan to administer additional loan programs through DERA because the program was not a good mechanism for establishing and administering low-cost financing programs. *See* EPA, *Third Report to Congress: Highlights from the Diesel Emission Reduction Program*, EPA-420-R-16-004 (February 2016), 16.

[40]EPA, *Diesel Emissions Reduction Act (DERA) Fifth Report to Congress*.

[41]Vehicle replacements accounted for the vast majority of DERA projects in fiscal years 2017 and 2018. See EPA, *DERA Fifth Report to Congress*.

aimed at reducing diesel emissions from sources in other sectors including agriculture, construction, freight, and ports.

According to EPA's website, the agency has helped fund school bus replacements through both DERA grants and rebates programs.[42] EPA has selected grant recipients based on an evaluation of application materials and scoring criteria, which reflect statutory and programmatic priorities. By contrast, EPA has used a lottery process to select recipients for the DERA program school bus rebates, according to EPA officials.

As implemented by EPA, the DERA school bus grants and rebates programs generally do not fully cover the purchase price of a replacement bus.[43] Agency officials told us that under the DERA program, EPA set per bus award values based on considerations such as school bus prices, providing eligible applicants an incentive to apply, and maximizing the number of vehicles funded. EPA first offered a DERA School Bus Rebate program in 2012 and awarded recipients rebates from $25,000 to $35,000 per bus, which was about 25 percent of the purchase price for a replacement school bus, according to EPA officials.

Since then, EPA has revised the amount of per bus funding for DERA program projects to better accommodate zero-emission and other nondiesel buses that have higher up-front costs, according to the agency's DERA Fifth Report to Congress.[44] More specifically, EPA revised the amount of per bus rebate awards based on the fuel type of the replacement bus, with electric vehicles receiving the highest possible rebate amount. For example, EPA's FY2021 DERA School Bus Rebate program offered $20,000 for diesel or gasoline replacement buses, $25,000 for propane replacement buses, $30,000 for natural gas replacement buses, and $65,000 for electric replacement buses.[45] A second and distinct FY2021 School Bus Rebate program, which used supplemental appropriations from the American Rescue Plan Act of 2021,

[42]"National DERA Awarded Grants," (website), EPA, last modified on October 17, 2024, https://www.epa.gov/dera/national-dera-awarded-grants. See also "Awarded DERA Rebates," (website), EPA, last modified on March 19, 2025, https://www.epa.gov/dera/awarded-dera-rebates.

[43]Agency officials stated that the DERA Tribal and Territory Program grants may cover the full purchase price of a new school bus.

[44]EPA, *DERA Fifth Report to Congress*.

[45]EPA, *2021 Diesel Emissions Reduction Act (DERA) School Bus Rebates Program Guide*, EPA-420-B-21-044 (September 2021).

offered up to $300,000 per electric bus for up to four electric school buses.[46]

The DERA program has helped fund various types of replacement school buses, including compressed natural gas, diesel, electric, gasoline, and propane buses.[47] The school bus replacements funded under DERA programs (FY2019–FY2021) were primarily new diesel buses, according to EPA documentation (see table 2).[48]

Table 2: Number of Replacement School Buses Funded by Diesel Emissions Reduction Act (DERA) Program Fiscal Years 2019 through 2021 (National, State, and Tribal Grants; School Bus Rebates; and American Rescue Plan Rebates, as of March 2025)

	Fuel Type				
Program Fiscal Year	**Diesel**	**Propane**	**Gasoline**	**Natural Gas**	**Electric**
2019	934	350	148	13	22
2020	975	441	151	16	55
2021	768	273	68	1	64
Total	**2,677**	**1,064**	**367**	**30**	**141**

Source: EPA documentation. | GAO-25-106887

Note: Estimated numbers of replacement buses funded by DERA program awards as of March 2025. The U.S. Environmental Protection Agency considers the numbers "proposed" until it receives final vehicle data and closes the DERA program awards.

[46]The American Rescue Plan Act of 2021 appropriated $50 million to several EPA programs, including the DERA program, for "activities that identify and address disproportionate environmental or public health harms and risks in minority populations or low-income populations." Pub. L. No. 117-2, § 6002(a)(1), 135 Stat. 4, 93. EPA stated that it obligated about $7 million of the $50 million to fund electric school bus rebates. *See* EPA, *2021 American Rescue Plan (ARP) Electric School Bus Rebates Program Guide*, EPA-420-B-21-045 (September 2021).

[47]Recipients may use DERA funds to replace diesel school buses with new diesel school buses that meet current emission standards, as defined in the Program Guide. For example, see EPA, *2021 Diesel Emissions Reduction Act (DERA) School Bus Rebates Program Guide*.

[48]The agency officials provided information about number of buses funded during program years of the following subprograms: FY2019, FY2020, and FY2021 National Grants; FY2018-2019 Tribal Grants; FY2020, FY2021 Tribal and Territory Grants; FY2019, FY2020, FY2021 State Grants; FY2019, FY2020, FY2021 School Bus Rebates; and the American Rescue Plan Act of 2021 Rebates. The following DERA subprograms are underway, as of March 2025, according to EPA officials: FY2022–2023 DERA National Grant, FY2023–2024 State Grant, FY2022 Tribal and Territory Grant, and FY2024 Tribal and Territory Grant.

EPA's Clean Heavy-Duty Vehicles Program

The Inflation Reduction Act of 2022 appropriated a total of $1 billion from FY2022 through FY2031 for the Clean Heavy-Duty Vehicles program, EPA's newest program to offer funding for the replacement of heavy-duty diesel vehicles, including certain school buses, with zero-emission vehicles.[49] The Inflation Reduction Act of 2022 directed EPA to implement a program for grants and rebates to eligible recipients to help pay for electric and other zero-emission vehicles, fueling and charging infrastructure, and workforce development, among other activities.[50] The statute also directed EPA to award at least $400 million of the total Clean Heavy-Duty Vehicles appropriation for projects serving one or more communities in areas that do not meet federal air quality standards. Appendix II provides additional information about key elements of the Clean Heavy-Duty Vehicles program.

EPA's FY2024 Clean Heavy-Duty Vehicles Grant program offered two subprograms—one grant subprogram for school bus replacements and one grant subprogram for vocational vehicle replacements. Vocational vehicles eligible for grants include garbage trucks, street sweepers, transit buses, and other box trucks. According to EPA documentation, the agency plans to allocate 70 percent of Clean Heavy-Duty Vehicles grant funds for school bus awards and 30 percent for vocational vehicle awards. In April 2024, EPA announced that it may award up to $932 million under the FY2024 Grant program. According to EPA officials we interviewed, the agency has not determined whether or when it will offer a second Clean Heavy-Duty Vehicles funding opportunity.

According to agency officials, EPA selected Clean Heavy-Duty Vehicles FY2024 Grant program recipients through an evaluation of application materials and scoring criteria using a point system reflecting statutory requirements and other agency-determined criteria. Specifically, agency officials told us that EPA evaluated applications based on statutorily defined criteria, such as projects being located in areas that do not meet federal air quality standards, and other criteria, such as community

[49]Pub. L. No. 117-169, § 60101, 36 Stat. 1818, 2063 (codified at 42 U.S.C. § 7432).

[50]The Inflation Reduction Act of 2022 directed EPA to fund zero-emission Class 6 and Class 7 heavy-duty vehicles. 42 U.S.C. § 7432(d)(3). EPA created two sub-programs: one for school buses and one for other types of eligible vehicles, which EPA refers to as "vocational vehicles." Electric school buses are the only type of zero-emission vehicle eligible under the Clean Heavy-Duty Vehicles school bus sub-program of the 2024 Clean Heavy-Duty Vehicles program. Heavy-duty electric vehicles or hydrogen fuel cell vehicles are eligible for the vocational sub-program of the 2024 Clean Heavy-Duty Vehicles program.

engagement efforts, project sustainability, and workforce development activities.[51]

According to EPA documents, under the 2024 Clean Heavy-Duty Vehicles school bus grant subprogram, EPA plans to award 75 percent of the purchase price of a new electric school bus, generally up to a cap of $280,000, that applicants may also use to help cover infrastructure costs.[52] In December 2024, EPA announced that it tentatively selected applications to receive a total of approximately $735 million under the FY2024 Grant program, including $490 million to fund about 1,600 new zero-emission school buses and associated eligible infrastructure. According to EPA officials, the agency obligated $634.1 million under the Clean Heavy-Duty Vehicles program for 63 grants, as of February 2025.

DOE's Renew America's Schools Program

DOE established the Renew America's Schools program under the Infrastructure Investment and Jobs Act, which authorized and appropriated a total of $500 million from FY2022 through FY2026 for the department to fund energy improvements at public schools.[53] Energy improvements, as defined in the statute, include any improvement, repair, or renovation to a school that directly reduces the school's energy costs, such as improvements to heating and cooling systems, improved lighting, and the installation of renewable energy technologies.[54] In addition, the Infrastructure Investment and Jobs Act identifies the lease or purchase of alternative fueled school buses as an energy improvement eligible for funding.

The Infrastructure Investment and Jobs Act directs DOE to prioritize grant applications for schools with renovation, repair, and improvement funding needs; schools with high percentages of students eligible for free or reduced-price lunch; schools in a rural area; or schools that leverage private sector funding through energy-related performance contracting. Appendix II provides more information about key elements of DOE's Renew America's Schools program.

[51]For additional information about evaluation criteria, see EPA, *Clean Heavy-Duty Vehicles Grants: Request for Applications*, EPA-R-OAR-CHDV-24-06 (April 2024).

[52]The percentage of EPA's cost share varies among the types of vehicles eligible for Clean Heavy-Duty Vehicles funding.

[53]Pub. L. No. 117-58, § 40541, 135 Stat. 429, 1071-1074 (codified at 42 U.S.C. § 18831).

[54]42 U.S.C. § 18831(a)(4).

As of February 2025, DOE implemented two rounds of Renew America's Schools funding—the FY2022–2023 Grant program and the FY2024–2025 Award program, a multiphase funding process that first awards a cash prize to teams and then awards grants to a subset of the cash prize recipients.[55] While the design of the funding mechanism of the two Renew America's Schools programs differed, the types of activities eligible for funding were generally the same. Specifically, the FY2022–2023 Grant program and the FY2024–2025 Award program invited applications for energy improvement projects, including alternative fuel school buses, from consortiums of schools and their partners.

As of February 2025, DOE obligated $289 million under the Renew America's Schools program, including $178 million to 24 recipients for the FY2022–2023 Renew America's Schools Grant program, according to DOE officials. Two of the 24 recipients planned to use a total of $4.6 million for electric school buses. DOE officials also stated that as of February 2025, the department obligated approximately $111 million under the FY2024–2025 Award program.[56] The FY2024–2025 funding applied to planning and analysis completed by the Award program recipients and did not fund school buses or other energy improvements, according to DOE officials we interviewed.[57]

[55]In June 2025, DOE officials told us that the program is under review as required by Executive Order 14222, *Implementing the President's "Department of Government Efficiency" Cost Efficiency Initiative.* Exec. Order No. 14222, § 3(b), 90 Fed. Reg. 11095 (Mar. 3, 2025).

[56]In August 2024, DOE announced 21 prize winners for the first phase of the FY 2024–2025 Award program that will each receive a cash prize.

[57]Sixteen of the Phase 1 Award program winners will move on to Phases 2 and 3, during which they will enter and execute cooperative agreements with the U.S. Department of Energy for awards. Proposed energy improvement projects include new heating, ventilation, and air conditioning systems, building envelope and lighting upgrades, alternative fuel (such as electric) vehicles and infrastructure, and renewable energy technologies. See "Challenge Updates: 21 Awardees From 25 States Win Phase One of the Renew America's Schools Prize!", U.S. Department of Energy and National Renewable Energy Laboratory, published August 5, 2024.

Fragmentation and Overlap Exist Among Federal Programs for Nondiesel School Buses, and Agencies Have Taken Steps to Address Them

Federal funding for nondiesel school buses is fragmented across two agencies and four programs with overlapping goals, supported activities, and eligible applicants. The fragmentation and overlap among the programs have varying effects. EPA and DOE have taken steps to address these effects. For example, EPA officials considered consolidating the agency's three school bus funding programs, but ultimately decided against doing so because of the programs' different statutory requirements and prioritization criteria.

Federal Funding for Nondiesel School Buses Is Fragmented and the Associated Programs Have Overlapping Goals, Supported Activities, and Eligible Applicants

Funding for the four key federal programs for nondiesel school buses is fragmented, according to our analysis of program documentation. As previously discussed, the term "fragmentation" refers to circumstances in which more than one federal agency—or more than one entity within an agency—is involved in the same broad area of national need.[58] Funding for nondiesel school buses is fragmented because two federal agencies—EPA and DOE—manage four programs that address the same broad area of national need to protect children's health by reducing emissions from school buses.

These four programs were established under different legislation that authorized funding for the deployment of nondiesel vehicles. Specifically, the Energy Policy Act of 2005, as amended, directed the EPA Administrator to implement the DERA program.[59] The Inflation Reduction Act of 2022 directed the EPA Administrator to implement a program to replace certain heavy-duty vehicles with zero-emission vehicles.[60] In addition, the Infrastructure Investment and Jobs Act directed the EPA Administrator to implement a program for replacing existing school buses with clean school buses.[61] The Infrastructure Investment and Jobs Act also directed the DOE Secretary to award grants for energy improvements at public schools, which included the lease or purchase of alternative fueled school buses as an energy improvement eligible for

[58]GAO-15-49SP, 11.

[59]*See* Pub. L. No. 109-58, § 791-797, 119 Stat. 838-844 (codified as amended at 42 U.S.C. §§ 16131-16137).

[60]*See* Pub. L. No. 117-169, § 60101, 36 Stat. 1818, 2063-64 (codified at 42 U.S.C. § 7432).

[61]*See* Pub. L. No. 117-58, § 71101,135 Stat. 429, 1321-25 (2022) (codified as amended at 42 U.S.C. § 16091).

funding.[62] Subsequently, DOE established the Renew America's Schools program.

The four federal programs that provide grants and rebates for nondiesel school buses also have overlapping goals, supported activities, and eligible applicants. Of the four programs, three share a documented goal of reducing emissions from school buses.[63] All four share the general goal of improving air quality, as shown in table 3. In addition, all four programs can fund similar projects (e.g., the purchase of nondiesel school buses) and include school districts among the eligible applicants. See table 3 for additional examples of overlapping goals, activities, and eligible applicants for the programs.

Table 3: Overlapping Goals, Activities, and Eligible Applicants for Federal Programs that Help Fund Nondiesel School Buses, by Agency and Program

	U.S. Environmental Protection Agency			U.S. Department of Energy
	Clean School Bus	**Diesel Emissions Reduction Act**	**Clean Heavy-Duty Vehicles**	**Renew America's Schools**
Program Goals[a]				
Reduce emissions	✓	✓	✓	✓
Improve air quality	✓	✓	✓	✓
Deploy low-emissions school buses	✓	✓	✓	✓
Enhance environmental justice	✓	✓	✓	✓
Support domestic economy and workforce	✓	✓	✓	✓
Improve energy performance	✗	✗	✗	✓
Support strategies to address climate change	✓	✓	✓	✓
Eligible Activities[b]				
Purchase alternative fuel vehicles	✓	✓	✓	✓
Support infrastructure costs	✓	✓	✓	✓
Fund mechanic or driver training	✓	✓	✓	✓
Lease alternative fuel vehicles	✗	✗	✗	✓

[62] *See* Pub. L. No. 117-58, § 40541, 135 Stat. 429, 1071-1074 (codified at 42 U.S.C. § 18831).

[63] *See* EPA, *Diesel Emissions Reduction Act (DERA) Fifth Report to Congress*; *EPA Clean School Bus Program: Fourth Report to Congress*; and *Clean Heavy-Duty Vehicles Grants: Request for Applications,* EPA-R-OAR-CHDV-24-06 (Washington, D.C., April 2024).

Fund other technologies to reduce diesel emissions from vehicles and engines	✗	✓	✗	✗
Fund other energy improvements (nonvehicular)	✗	✗	✗	✓
Eligible Applicants				
State or local agencies (including public schools)	✓	✓	✓	✓
Tribes and territories	✓	✓	✓	✓
Nonprofit organizations	✓	✓	✓	✓
Community partners[c]	✗	✗	✗	✓
Contractors providing bus service	✓	✓	✗[d]	✗

✓ = Yes; ✗ = No

Source: GAO analysis of agency information. I GAO-25-106887

[a]Selected program goals were based on the agencies' program documentation.

[b]Selected eligible activities and applicants were based on statutory requirements and program documentation.

[c]Community partners refer to entities that have the knowledge and capacity to partner and assist with energy improvements, such as entities eligible for funding under the U.S. Department of Energy's Renew America's Schools Program. *See* 42 U.S.C. § 18831(a)(3)(B)(iv).

[d]The Inflation Reduction Act of 2022 directs the U.S. Environmental Protection Agency (EPA) to establish a program to make awards of grants and rebates to eligible recipients, and to make awards of contracts to eligible contractors for providing rebates covering up to 100 percent of the incremental costs of replacing heavy-duty vehicles with zero-emission vehicles and for related infrastructure, workforce training, and planning and technical activities. *See* 42 U.S.C. § 7432(b). EPA documentation indicates that private contractors were not eligible to apply directly for the fiscal year 2024 Clean Heavy-Duty Vehicles (CHDV) grant program. As of November 2024, EPA officials said that they had not offered an opportunity under the CHDV to make awards to eligible contractors for providing rebates.

The Effects of Fragmentation and Overlap Among the Programs Vary

Based on our review of EPA documents and interviews with stakeholders, the effects of fragmentation and overlap among these programs vary. On one hand, the fragmentation in program funding helps to support a greater variety of applicants' needs. Specifically, our analysis found that the programs' different prioritization criteria provide a wider range of opportunities for potential applicants than would be available if all the programs used a uniform set of prioritization criteria. For example, the Infrastructure Investment and Jobs Act allowed EPA to prioritize certain applicants for the Clean School Bus program (e.g., applicants that serve rural areas, low-income areas, or children living on tribal lands), while the DERA program prioritizes certain projects (e.g., projects that maximize public health benefits and cost effectiveness).

In addition, school districts face less competition for available funding and have more access to funding to replace diesel school buses when multiple funding opportunities are available, according to stakeholders. Meanwhile, demand for funding to replace school buses has been high.

For example, EPA reported that it received about 2,000 applications for nearly $4 billion in funding for 2022 Clean School Bus program rebates. Even after EPA increased the rebates available for the FY2022 Rebate program, from $500 million to $965 million, more than 1,500 applicants were placed on a waitlist to receive rebates.[64] Additionally, in 2021, 160 applicants were waitlisted for rebates to replace school buses under DERA.[65]

On the other hand, fragmentation and overlap across the four programs can increase the administrative burden on applicants that wish to apply for funding opportunities from more than one program. For example, portions of the application packages for Clean School Bus, Clean Heavy-Duty Vehicles, and DERA program funding require applicants to provide duplicative information. Specifically, the grant funding opportunities under all three programs require applicants to submit certain standardized forms.[66] Consequently, applicants that wish to be considered for funding opportunities under more than one of these programs must submit these forms more than once. Five of the nine school districts we interviewed reported having applied for more than one funding opportunity under EPA's programs. EPA officials we interviewed said that some applicants asked if they could resubmit past applications during future funding cycles to reduce the work associated with applying. However, these officials told us that resubmitting past applications is not an option because program requirements and applicant information can change from one funding cycle to the next.

Several stakeholders we interviewed, including officials from five school districts and one state agency, told us that grant applications for even one of the four federal programs can be complex, difficult to understand, and

[64]According to EPA documentation, the 2022 waitlist did not include applicants that dropped out or were deemed ineligible. Applicants that were waitlisted were not selected for funding in the initial lottery process. *See* EPA Office of Transportation and Air Quality, *2022 Clean School Bus (CSB) Waitlist* (Washington, D.C., October 2022).

[65]*See* EPA Office of Transportation and Air Quality, *2021 DERA School Bus Rebates Applicant Waitlist* (Washington, D.C., March 2022).

[66]These forms include *Standard Form 424: Application for Federal Assistance*, *Standard Form 424A: Budget Information for Non-Construction Programs*, *EPA Form 4700-4: Pre-Award Compliance Review Report*, and *EPA Form 5700-54: Key Contacts Form. See* EPA's *2023 Clean School Bus Grant Program Notice of Funding Opportunity*, EPA-OAR-OTAQ-23-06 (Washington, D.C., April 2023), 25; *Clean Heavy-Duty Vehicles Grants Request for Applications*, EPA-R-OAR-CHDV-24-06 (Washington, D.C., April 2024), 32; and *2022-2023 Diesel Emissions Reduction Act National Grants Notice of Funding Opportunity*, EPA-OAR-OTAQ-23-03 (Washington, D.C.) 38.

time consuming to complete. For example, one school transportation director we interviewed reported that his rural school district had a steep learning curve when applying for funding under DOE's Renew America's Schools program. The director said that coordinating with district employees from other departments (e.g., the maintenance department) that were unaccustomed to applying for federal grants was time-consuming. Another stakeholder we interviewed added that school districts often lack dedicated grant writers and school transportation directors often "wear multiple hats," which may interfere with the time they have to apply for grants.

EPA and DOE Have Taken Steps to Address the Effects of Fragmentation and Overlap

EPA and DOE have taken various steps to address the effects of fragmentation and overlap associated with the programs. For example, EPA officials said that they considered consolidating the agency's three school bus funding programs. However, the same officials explained that they decided against doing so for the following reasons:

- **The programs have different statutory requirements.** For example, the statutory requirements for the Clean Heavy-Duty Vehicles program define the vehicles eligible for program funding based on their weight.[67] In contrast, the DERA program allows eligible entities to use program funds for buses, locomotives, marine engines, and other vehicle types.[68] EPA officials told us that addressing the different requirements in one application could create more work for applicants.
- **The programs have different prioritization criteria.** For example, the Clean School Bus program statutory provisions allow EPA to prioritize applicants from rural or low-income areas.[69] In contrast, DERA requires EPA to prioritize projects that—among other things—maximize public health benefits.[70] EPA officials concluded that even if

[67]Class 6 and Class 7 heavy-duty vehicles are eligible for program funds under EPA's Clean Heavy-Duty Vehicles program. 42 U.S.C. § 7432(d)(3). EPA defines Class 6 as vehicles above 19,500 pounds GVWR, but less than or equal to 26,000 pounds GVWR and Class 7 vehicles as above 26,000 pounds GVWR, but less than or equal to 33,000 pounds GVWR. *See* 40 C.F.R. § 1037.801 (defining different vehicle classes and GVWR as the maximum design loaded weight of a single vehicle as determined by the vehicle manufacturer).

[68]*See* 42 U.S.C. § 16132(d)(1).

[69]*See* 42 U.S.C. § 16091(b)(4)(B).

[70]*See* 42 U.S.C. § 16132(c)(4)(A).

EPA explained these differences clearly, consolidating programs with differing prioritization factors could prove confusing to applicants.

- **Accounting could prove challenging**. EPA officials expressed concerns that it could be challenging to account for different program expenditures. These officials explained that the agency is required to keep Clean School Bus funds separate from DERA program funds to ensure that the funds are spent in accordance with the programs' different statutory requirements.

To address the effects of fragmentation and overlap, EPA also paused the DERA School Bus Rebate program when it began implementing the Clean School Bus program. EPA officials explained that they did so because the Clean School Bus program also provides rebates for school buses. However, EPA continued to award DERA grants and, according to EPA officials, may make DERA school bus rebates available at a future date. In addition, EPA designated one team in the agency's Office of Air and Radiation to manage the programs. This centralized approach helps program staff collaborate, better ensure EPA and applicants' compliance with statutory requirements, and strategically pace funding opportunities to avoid overwhelming potential applicants, according to agency officials we interviewed.

Additional steps the agencies have taken to address fragmentation and overlap include interagency coordination. Specifically, program staff from EPA and DOE told us that they met at the outset of the Clean School Bus and Renew America's Schools programs to discuss their respective plans for designing the programs, implementing the programs, and rolling out funding.[71] Since then, EPA and DOE officials have continued to meet both formally and informally to discuss topics such as the status of program implementation, whether either agency has implemented programmatic changes, and expectations for next steps, according to DOE officials we interviewed.

Finally, EPA officials told us that they have taken several steps to reduce the time and resources needed to apply to more than one of these programs. For example, EPA has disseminated fact sheets and other relevant information on the website for each program. EPA also has

[71]DOE officials also told us that, given the potential program overlap, the department worked to focus funding selections on innovative energy uses, such as mobile storage, demand flexibility, and bi-directional charging, rather than strictly transportation uses.

coordinated with DOE and the Joint Office, which provides technical assistance and resources for program applicants.[72]

EPA and DOE Collect Information to Track Programs' Performance but Opportunities Exist for EPA to Better Assess Progress Toward Program Goals

EPA and DOE collect certain information to track progress toward achieving the goals of key programs that help fund nondiesel school buses. Specifically, EPA collects and uses information to track progress toward the program goals of the Clean School Bus and DERA programs.[73] DOE collects information on the performance of the Renew America's Schools program and has provided training to grant recipients to support reporting accurate and complete information about funded activities and results to DOE. However, EPA has opportunities to better assess progress toward achieving Clean School Bus and DERA program goals.

EPA and DOE Collect Performance Information to Track Progress toward Program Goals

EPA Collects and Analyzes Performance Information

EPA collects performance information from Clean School Bus and DERA funding recipients to track progress toward achieving program goals.[74] Performance information, a type of evidence, refers to quantitative or

[72]DOE's Joint Office of Energy and Transportation, established under the Infrastructure Investment and Jobs Act, supports programs that seek to deploy electric vehicles and charging infrastructure. The office also provides free technical assistant to members of the public transitioning to electric vehicles.

[73]In December 2024, EPA announced the tentative selection of applications to receive approximately $735 million under the FY2024 Clean Heavy-Duty Vehicles Grant, which is the first grant opportunity administered under this program. Given the recency of this program, EPA had not tracked progress toward the program goals as of March 2025.

[74]EPA requires Clean Heavy-Duty Vehicles grant recipients to report information to the agency about their grant activities and results, similar to the performance information reported under the Clean School Bus and DERA programs. *See* EPA, *Clean Heavy-Duty Vehicles Grants, Request for Applications*, EPA-R-OAR-CHDV-24-06 (April 2024). As previously noted, EPA announced in December 2024 the tentative selection of applications to receive approximately $735 million under the FY2024 Clean Heavy-Duty Vehicles Grant, which is the first grant opportunity administered under this program.

qualitative data used to assess the performance of a program.[75] Clean School Bus and DERA program funding recipients provide performance information to EPA in reports about funded activities and results, as required by the Clean School Bus and DERA programs. Examples of performance information collected by EPA include the number of buses replaced using funds from the two programs and the purchase price of replacement buses. Table 4 provides additional examples of performance information that EPA requests from funding recipients, along with examples of related program goals.

Table 4: Examples of Performance Information and Related Program Goals for U.S. Environmental Protection Agency (EPA) Programs

Program	Examples of performance information requested by EPA	Examples of program goals relevant to the performance information
EPA's Clean School Bus Program		
Grant	Number of buses delivered, types of chargers, expectations for use of new bus (e.g., mileage, location), duration of battery or powertrain warranty, proof of scrappage.	Deploy low-emissions school buses, reduce emissions, improve air quality
Rebate	Closeout form documents delivery of new bus, purchase of charging infrastructure, proof of scrappage.	Deploy low-emissions school buses
EPA's Diesel Emissions Reduction Act (DERA) Program		
National Grant	Document scrappage, gallons of fuel saved, tons of emissions reduced.	Deploy low-emissions school buses, reduce emissions, improve air quality
School Bus Rebate	Document delivery of new bus and scrappage of replaced bus.	Deploy low-emissions school buses
EPA's Clean Heavy-Duty Vehicles Program		
Grant	Number of buses replaced, types of chargers, expectations for use of new bus (e.g., mileage, location), duration of battery or powertrain warranty, proof of scrappage.	Deploy low-emissions school buses, reduce emissions, improve air quality

Source: GAO analysis of program guides and interviews with EPA officials. I GAO-25-106887

[75]This report focuses on performance information, which is one type of evidence. Other forms of evidence include program evaluations, statistical data, and other research and data. *See* GAO-23-105460 and GAO, *Evidence-Based Policymaking: Survey Results Suggest Increased Use of Performance Information across the Federal Government,* GAO-22-103910 (Washington, D.C.: Nov. 3, 2021).

Grant recipients from all three programs must submit interim progress reports and a final report that describe the recipient's vehicle fleet and discuss any problems, successes, and lessons learned. EPA has developed fillable spreadsheet templates for recipients of the three grant programs that may help standardize the information reported, such as specifications of the replacement bus, along with open-ended questions about problems, success, and lessons learned.

In contrast, the Clean School Bus and DERA School Bus Rebate program recipients submit simpler forms to document bus purchase and do not report information about problems, successes, or lessons learned. For example, the Clean School Bus Rebate recipients are required to submit two basic forms. One form documents that they ordered their replacement school buses and requests the rebate payment. The second form documents proof of purchase, delivery of the replacement school bus, and provides evidence that the replaced bus was destroyed. DERA School Bus Rebate program recipients are also responsible for submitting a payment request form and supporting documents, including proof of scrappage of the replaced vehicle and proof of the new vehicle delivery or technology installation. In addition, EPA has provided resources to support submission of forms under both rebate programs. For example, EPA hosted a webinar to review the requirements of the closeout process, including the closeout form, for the FY2022 Clean School Bus Rebate program.

EPA uses the performance information to track progress toward the goals of the Clean School Bus and DERA programs. For example, EPA has begun collecting information under the Clean School Bus program, such as the number and type of replacement buses purchased with program funds, to track progress toward the program's goal of deploying low emissions school buses. EPA has also used information about DERA program-funded replacement school buses, such as vehicle specifications, to estimate emission changes and track progress towards the DERA program's goal to reduce emissions.[76] Additionally, under the

[76]EPA has used a web-based tool that relies on the agency's Motor Vehicle Emission Simulator (MOVES) model to calculate emission reductions from DERA program projects funded through FY2018. MOVES is EPA's emission model that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics. *See* MOVES and Mobile Source Emissions Research, EPA, last updated on February 18, 2025, https://www.epa.gov/moves.

DERA program, EPA uses information about the volume of fuel saved to track progress toward the program's fuel conservation goal.

EPA reports its assessments of progress toward Clean School Bus and DERA program goals to Congress. Specifically, EPA has published four annual reports for Congress that provide information about the design and implementation of the Clean School Bus program.[77] EPA's Clean School Bus reports have described program goals and provided information about the awards issued—such as number of selectees, the geographic distribution and prioritization status of selectees, and the number of buses and level of funding awarded. EPA has also published five reports for Congress that summarize the results of DERA program projects, such as reductions in fuel use and in diesel emissions. The fifth and most recent DERA report to Congress summarizes results from the FY2008 through FY2018 DERA programs and provides additional details about FY2017 and FY2018 DERA program projects.[78]

DOE Collects Performance Information and Plans to Report Progress toward Program Goals

DOE has begun collecting performance information from reporting forms submitted by recipients of grants under the Renew America's Schools program. Examples of the performance information DOE collects include the type of energy efficiency technology installed and any associated changes in energy consumption, which may help the department track progress toward the program's goal to improve energy performance.

DOE officials told us in November 2024 that the department has supported reporting of accurate, complete, and consistent information across the program's projects by providing standardized forms and offering training regarding use of the forms. For example, in the fall of 2024, DOE provided training for using seven reporting forms designed to collect information about the results of funded activities and progress toward program goals, including improvements in energy performance, workforce development, and enhancement of environmental justice.

[77]As of January 2025, the most recent Clean School Bus Program report for Congress discussed awards made under FY2022 and FY2023 funding opportunities. EPA, *EPA Clean School Bus Program, Fourth Report to Congress*. EPA is required to submit to Congress annually a report that evaluates the implementation of the program. 42 U.S.C. § 16091(b)(8).

[78]EPA, *Diesel Emissions Reduction Act (DERA) Fifth Report to Congress*. EPA is required to submit to Congress biennially a report evaluating the implementation of the DERA programs. 42 U.S.C. § 16134.

DOE has published limited information about progress toward program goals partly because the program is new. DOE has reported program funding, and the number of students and teachers expected to benefit from the energy improvement projects on the program website. In addition, DOE has not yet quantified progress toward program goals, such as energy cost savings and the development of healthier learning spaces.

According to DOE officials we interviewed, recipients of FY2022–2023 Grant program funding submitted the required reports, which document progress toward goals, to the department by the end of 2024.[79] DOE officials stated that the department will use the reports to track program-wide progress toward achieving program goals. In particular, the officials said that, as of November 2024, they expected to aggregate project-specific information to the program-level and report program outcomes but had not yet determined how or when it would do so.

EPA Has Opportunities to Use Key Practices to Better Assess Progress Toward Achieving Program Goals

EPA has opportunities to better assess progress in achieving the goals of its Clean School Bus and DERA programs. These opportunities are based on key practices we have identified for assessing performance information to measure the results of federal efforts. We identified two opportunities, based on our analysis of agency documentation and interviews with agency officials, for EPA to assess the sufficiency of existing evidence and build on it to improve how the agency tracks progress toward certain goals of the Clean School Bus and DERA programs.[80] These two opportunities involve systematically tracking performance information and building comprehensive information about emission reductions.

Key Practices for Assessing Results of Federal Efforts

Our past work has identified key practices for assessing the results of federal efforts and highlighted the importance of assessing the sufficiency of performance information and building evidence that federal agencies

[79]The Infrastructure Investment and Jobs Act requires funding recipients to submit to DOE a report describing (1) the use of the grant funds for energy improvements; (2) the estimated cost savings realized by those energy improvements; (3) the results of any third-party investigation and analysis conducted relating to those energy improvements; (4) the use of any utility programs and public benefit funds; and (5) the use of performance tracking for energy improvements. Pub. L. No. 117-58, § 40541(i), 135 Stat. 429, 1074 (codified at 42 U.S.C. § 18831(i)).

[80]This report focuses on performance information, which is one type of evidence. Other forms of evidence include program evaluations, statistical data, and other research and data. GAO-23-105460 and GAO-22-103910.

use to assess progress towards achieving program goals.[81] Assessing the sufficiency of performance information and other forms of evidence includes (1) considering the quality of gathered evidence, such as completeness and timeliness of information, and (2) determining whether the gathered evidence is sufficient to understand progress toward goals. Building evidence involves ensuring that the new evidence would support the agency's assessment of progress toward program goals.[82]

Opportunity to Systematically Gather Performance Information Related to Bus Deployment

EPA has an opportunity to build more complete and timely performance information to improve how the agency tracks progress toward the goal of the Clean School Bus program to deploy low-emissions school buses. In particular, EPA has an opportunity to more systematically gather information to verify that buses have been deployed and track factors that may hinder progress toward deployment of buses.

According to EPA's 2025 Clean School Bus report to Congress, one of the largest hurdles to reaching closeout and deploying replacement buses has been planning for, financing, and installing electric bus charging infrastructure.[83] The school officials we interviewed echoed this view. For example, one school official described challenges with charging infrastructure that delayed the deployment of one new bus, which sat unused for about 9 months. Officials from a different school told us that infrastructure-related delays have consequences for the bus warranty period because the warranty clock starts once the bus is delivered, regardless of whether the infrastructure is ready. EPA officials told us that the agency has sought to address the infrastructure challenges by working with interagency partners and stakeholders to develop technical assistance and educational resources that are responsive to stakeholder needs.

EPA does not systematically collect complete performance information from rebate recipients to verify that buses have been successfully deployed or to track factors—such as infrastructure delays—that may hinder progress toward bus deployment. Rather, EPA gathers limited

[81]GAO-23-105460.

[82]In a 2022 memorandum, the Office of Management and Budget affirmed the importance of these key practices. According to Office of Management and Budget M-22-12, *Advancing Effective Stewardship of Taxpayer Resources and Outcomes in the Implementation of the Infrastructure Investment and Jobs Act*, programs receiving IIJA funding should use data to measure progress and program effectiveness and evaluate performance.

[83]EPA, *EPA Clean School Bus Program, Fourth Report to Congress*.

information at the end of the project through the rebate closeout form, which provides documentation that the rebate recipient received the replacement buses and scrapped the replaced buses. However, EPA may not be able to determine from this information whether replacement buses have been deployed or if their deployment was delayed.

A December 2024 report by EPA's Office of the Inspector General (OIG) also determined that EPA should have developed controls to help ensure that the agency was aware of deployment status to determine whether schools would have new buses in operation by the October 2024 deadline.[84] Accordingly, the OIG recommended that the assistant administrator of EPA's Office of Air and Radiation develop and implement guidance for Clean School Bus program personnel reviewing rebate recipients' use and management of rebate funds.[85]

In addition, EPA does not have timely information about potential deployment delays because many of the Clean School Bus rebate recipients had not completed the rebate forms by the October 31, 2024, deadline.[86] EPA's awards website reports that, as of April 2025, recipients submitted closeout forms for about 72 percent of the FY2022 rebate awards.[87] EPA's awards website does not specify when the remaining 28 percent will close out. According to EPA officials, the agency granted extensions beyond the October 2024 deadline to some recipients upon request. Specifically, recipients that anticipated not being able to meet the October 2024 deadline had the option to submit requests for extensions to EPA beginning in July 2024 (i.e., the last 4 months of the 24-month

[84]EPA's Office of Inspector General (OIG) conducted an audit of the CSB program and concluded that EPA has not monitored the deployment status of buses funded by the CSB FY22 Rebate. EPA OIG, *The EPA Should Improve Monitoring of 2022 Clean School Bus Rebate Recipients' Use of Funds and Deployment of Buses and Infrastructure*, Report No. 25-P-0007 (Washington, D.C.: Dec. 4, 2024).

[85]EPA OIG, *The EPA Should Improve Monitoring of 2022 Clean School Bus Rebate Recipients.*

[86]As of November 13, 2024, recipients submitted closeout forms for approximately 53 percent of the FY2022 rebate awards, according to GAO's calculation from data that EPA made available on its awards website.

[87]Rebate recipients submit a closeout form to EPA that documents specifications of the replacement school bus and electric vehicle charging infrastructure, provides final invoices and proof of delivery, and provides proof of scrappage of the replaced school bus. EPA's approval of the rebate closeout form formally concludes the recipient's rebate award, signifying that the recipient has purchased and received a new school bus. For the awards website, see EPA, *Clean School Bus Program Awards*, https://www.epa.gov/cleanschoolbus/clean-school-bus-program-awards.

project period). EPA officials told us that when requesting an extension, recipients must describe areas where progress is being hindered, such as delays related to bus delivery or charging infrastructure. According to EPA's documentation, the agency may grant extensions if recipients provide "sufficient justification."[88]

EPA officials we interviewed stated that they learned about some delays through recipients' requests for extensions to the deadline for closeout forms. Agency officials further noted that EPA encourages rebate recipients to contact the agency as well as the Joint Office for support resolving problems they encounter deploying new buses. Beyond the FY2022 Rebate program, EPA officials also told us that the agency has partnered with the Joint Office to ensure the Joint Office proactively reaches out to recipients of the FY2023 Rebate program to offer support with deploying new buses.

Aside from the recipients that request extensions, however, the agency does not systematically gather timely information that may provide assurance about whether rebate recipients resolved challenges or successfully deployed the new school buses. For example, the rebate reporting form does not ask recipients to verify the deployment of buses or otherwise discuss progress using the rebate funds. In addition, EPA did not proactively monitor whether recipients of the FY2022 Rebate program were on track to meet the closeout deadline. Instead, EPA relied on the rebate recipients' assessment of whether they would miss the closeout deadline and the submission of extension requests in the final months of the project period to gauge progress toward closeout.

By systematically gathering more complete and timely performance information about bus deployment EPA could more effectively assess progress toward closeout and achievement of program goals. In particular, EPA could better manage the extent to which difficulties encountered by funding recipients, such as delays installing charging infrastructure, put federal investments in nondiesel school buses at risk.

In February 2025, EPA proposed to collect additional information from recipients of Clean School Bus rebates in response to a recommendation

[88]Agency guidance described one example—a bus is on order but is experiencing manufacturing or delivery delays—of scenario in which the agency may grant an extension. *See* EPA, *2022 Clean School Bus Rebates: Questions and Answers* (Dec. 30, 2024), 77.

from EPA's Office of the Inspector General.[89] Specifically, the agency stated that it planned to "introduce semi-annual progress reports" in future Clean School Bus rebate funding opportunities. Such reports, if used to systematically collect information from recipients about factors affecting bus deployment, could help provide EPA with more complete and timely information to assess progress toward achievement of program goals.

Opportunity to Build Comprehensive Information About Emission Reductions

EPA has an opportunity to develop more comprehensive information to track progress toward Clean School Bus and DERA program goals to reduce emissions and improve air quality. For example, more comprehensive performance information would include complete and timely information to estimate emission reductions resulting from each of the agency's key programs funding nondiesel school buses.

EPA used performance information and emission models to project the reductions of nitrogen oxides, particulate matter, and other pollutants from school buses funded under the FY2022 Clean School Bus Rebate program.[90] However, the estimates do not provide comprehensive information about progress toward the program's goal to reduce emissions because the agency's methodology does not include emissions related to electricity used to charge buses.[91] While electric buses produce no tailpipe emissions, the generation of electricity to charge the buses can produce air pollution, such as emissions of nitrogen oxides. Given the significant fraction of electric buses funded by the Clean School Bus

[89]EPA proposed this action "in further response" to a recommendation from the EPA's OIG to "develop and implement guidance for Clean School Bus Program personnel on reviewing Clean School Bus rebate recipients' use and management of rebate funds." The agency stated it would take this action in any future rebate program, pending successful completion of OMB'S Information Collection Request process. *See* EPA, *Response to the Office of Inspector General Final Report, The EPA Should Improve Monitoring of 2022 Clean School Bus Recipients' Use of Funds and Deployment of Buses and Infrastructure, Report No. 25-P-0007, December 4, 2024*, Memorandum to Office of Audit, Office of Inspector General (February 28, 2025).

[90]According to EPA's report to Congress, EPA's MOVES model was the primary source for the emissions calculations, and Argonne National Lab's AFLEET tool provided values for the propane vehicles. MOVES estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics. AFLEET estimates petroleum use, greenhouse gas emissions, air pollutant emissions, and cost of ownership of vehicles. EPA, *EPA Clean School Bus Program, Fourth Report to Congress*.

[91]The agency estimated the projected emissions reductions on emissions sources at the vehicle, including from the tailpipe, evaporative systems, and brake and tire wear that would occur over the operational life of the replacement buses. EPA, *EPA Clean School Bus Program, Fourth Report to Congress,* 14.

program (about 95 percent), estimates that do not include emissions associated with charging electric vehicles may result in misleading assessments of progress toward the program's goal to reduce emissions.[92]

EPA expects to refine the estimated emission reductions as additional information becomes available, according to the Fourth Report to Congress.[93] EPA officials we interviewed told us that while they do not yet have a methodology to characterize emissions associated with charging electric school buses, the agency is evaluating data sources and considering ways to characterize such emissions.

In addition, EPA has not estimated emission reductions for DERA school bus replacements since the agency made such estimates for the DERA FY2018 Grant and School Bus Rebate programs. Agency officials described the calculation and reporting of emission reductions as a time-intensive process and clarified that the agency does not report the reductions until final vehicle data are submitted to agency and the grant or rebate has been closed out. Also, the agency has not updated the methodology or estimated emission reductions from the electric school buses funded by the FY2021 DERA-American Rescue Plan Rebates program, according to EPA officials.

Agency officials stated that they would like to build on the methodology developed for the Clean School Bus program and apply it to the DERA and Clean Heavy-Duty Vehicles programs. EPA officials clarified that the methodology for each program will need to account for varying statutory requirements, such as the types of vehicles funded by each program. It is unclear whether the agency's estimates will be consistent or comparable across programs.

Our prior work has found that federal decision-makers need information about the extent to which federal programs are achieving their intended results.[94] Developing a methodology to characterize emissions related to

[92]According to DOE's National Renewable Energy Laboratory, the emissions associated with charging will depend on when and where the drivers charge electric vehicles. National Renewable Energy Laboratory, *Emissions Associated with Electric Vehicle Charging: Impact of Electricity Generation Mix, Charging Infrastructure Availability, and Vehicle Type*, NREL/TP-6A20-64852 (Golden, CO: April 2016).

[93]EPA, *EPA Clean School Bus Program, Fourth Report to Congress.*

[94]GAO-23-105460.

charging electric school buses and estimating emissions reductions from the agency's key programs would help EPA better understand the extent to which the billions of dollars invested in school bus replacements contribute to the goals of the Clean School Bus and DERA programs to reduce emissions. As EPA administers the Clean Heavy-Duty Vehicles Grant program, this type of methodology would also help EPA better assess the extent to which the Clean Heavy-Duty Vehicle program's investment in school bus replacements contributes to the program's goal to reduce emissions.

Conclusions

The federal government has invested billions of dollars to replace existing school buses with less polluting buses fueled by alternatives to diesel, such as electricity or propane. These investments have primarily come through four key programs. Three are EPA programs—the Clean School Bus program, DERA, and the Clean Heavy-Duty Vehicles program—and the fourth is DOE's Renew America's Schools program. The Clean School Bus program, the largest of these programs, has obligated about $2.8 billion, mostly for electric buses, since the program's establishment in 2022.

This level of investment brings a particular importance to ensuring that the programs are achieving their goals, which include deploying low-emissions buses and reducing emissions. EPA and DOE have collected some information to track their programs' performance, but EPA has opportunities to better assess progress toward certain program goals—particularly for the Clean School Bus and DERA programs—by building more complete and timely information related to the programs' performance. Specifically, EPA has opportunities to:

- More systematically gather information to (1) verify deployment of low-emissions buses funded under Clean School Bus program rebates and (2) to track factors—such as delays in installing charging infrastructure—that have hindered bus deployment, and
- Build more comprehensive information to assess emissions reductions by developing a methodology that includes emissions related to charging electric buses. Such emissions are not currently included in EPA's estimates.

By acting on these opportunities, EPA could better manage the extent to which factors like delays in installing electric bus charging infrastructure put federal investments at risk. EPA could also better understand the extent to which the billions of dollars invested in school bus replacements reduce emissions.

Recommendations for Executive Action

We are making the following two recommendations to EPA.

The Assistant Administrator of EPA's Office of Air and Radiation should gather complete and timely performance information—through rebate closeout forms or other mechanism—to verify the successful deployment of nondiesel school buses funded by Clean School Bus program rebates and track factors that may hinder progress toward bus deployment. (Recommendation 1)

The Assistant Administrator of EPA's Office of Air and Radiation should develop a methodology to characterize emissions related to charging electric school buses and estimate emission reductions from each of the agency's key programs funding nondiesel school buses. (Recommendation 2)

Agency Comments and Our Evaluation

We provided a draft of this report to DOE and EPA for review and comment. DOE provided written technical comments that we incorporated as appropriate. EPA provided written comments that are reproduced in appendix III and summarized below. In their comments, EPA generally agreed with our recommendations to the agency. EPA also provided technical comments that we incorporated as appropriate.

In written comments, EPA agreed with our recommendation that the agency gather complete and timely information to verify the successful deployment of buses funded by its rebate program. EPA also described actions it is taking and characterized them as consistent with our recommendation. For example, EPA stated that it requires rebate recipients to submit a closeout form to verify that new buses were deployed, and older buses were appropriately dispositioned. However, we found that the closeout forms document the receipt of new buses and disposition of the replaced bus, but not deployment of the new buses. As a result, EPA may be unable to use closeout forms to verify whether bus deployment occurred, whether deployment was delayed, or what factors contributed to any delays. Our report also showed that EPA did not proactively monitor whether recipients of the FY2022 Rebate program were on track to meet the closeout deadline. Updating the closeout form to explicitly require recipients to provide such information could help provide a mechanism for EPA to verify the successful deployment of nondiesel school buses and track factors that may hinder progress toward bus deployment.

EPA also stated that it began conducting in-person site visits in Fall 2024 to verify the successful deployment of nondiesel school buses and

expects to continue site visits at an increased pace through Fall 2025. However, to meet the intent of our recommendation, EPA would need to design site visits to ensure they would systematically provide timely information about bus deployment and factors affecting delays for all rebate recipients. By systematically gathering more complete and timely performance information about bus deployment, EPA could more effectively assess progress toward rebate closeout and achievement of program goals.

In written comments, EPA stated that it generally agreed with our recommendation concerning estimates of emission reductions from each of the agency's nondiesel school bus programs. EPA also stated that data availability may affect the agency's ability to develop a methodology to characterize emissions related to charging electric school buses. EPA added that it will continue to actively explore available data and tools to inform a methodology that can appropriately characterize emissions from charging electric school buses.

We recognize the importance of assessing whether tools, data, and resources allow quantification of emissions from vehicle charging and note that some existing tools may serve as a starting point for this assessment. For example, EPA's Power Profiler interactive web page allow users to determine the energy mix by region, and DOE and EPA's Beyond Tailpipe Emissions Calculator can help users estimate emissions associated with charging and driving an electric vehicle in a given zip code.[95] Our report discussed the importance of building more comprehensive information to assess emission reductions, which would allow EPA to better understand the extent to which the billions of dollars invested in school bus replacements reduce emissions.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Administrator of EPA, and the Secretary of Energy. In addition, the report will be available at no charge on the GAO website at https://www.gao.gov.

[95]*See* (1) "Power Profiler," EPA, last updated June 18, 2025, https://www.epa.gov/egrid/power-profiler#/ and (2) "Beyond Tailpipe Emissions Calculator," Greenhouse Gas Emissions from Electric and Plug-In Hybrid Vehicles, DOE and EPA, accessed June 18, 2025, https://www.fueleconomy.gov/feg/Find.do?action=bt2.

If you or your staff have any questions about this report, please contact me at gomezj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

Sincerely,

//SIGNED//

J. Alfredo Gómez
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

This report examines (1) key federal programs that help fund nondiesel school buses and how agencies implement them; (2) the extent to which fragmentation, overlap, and duplication exist among federal funding and key programs and any steps federal agencies have taken to address fragmentation, overlap, and duplication; and (3) the extent to which agencies track the performance of the key programs.

To examine key federal programs that help fund nondiesel school buses and how agencies implement them, we first identified the key federal programs. We defined a key federal program as one that either expressly aims to provide grants, rebates, or loans to help fund alternatives to diesel school buses, or that provided grants, rebates, or loans to help fund alternatives to diesel school buses for more than five school districts from Fiscal Year (FY) 2019 through FY2023. FY2019 through FY2023 represented the most recent and complete 5 fiscal years at the time of our analysis.

To identify key programs, we analyzed relevant laws, reviewed relevant literature, and interviewed agency officials and knowledgeable stakeholders. Through this work, we identified four key programs and included the four programs in our review. The laws we reviewed included the Infrastructure Investment and Jobs Act, the Inflation Reduction Act of 2022, and the Energy Policy Act of 2005, as amended by the Diesel Emissions Reduction Act (DERA) of 2010. We also searched for congressionally directed spending.

In addition, we reviewed relevant literature that we identified through searching databases, such as Grants.gov, Scopus, and ProQuest. We limited our searches to programs based in the United States and used terms such as “school bus” and “diesel replacement” to search for information about programs funding emission reductions from school buses. We searched for a variety of materials, including Notices of Funding Opportunities; government reports; trade or industry articles; association, nonprofit, think tank publications; general news; legislative materials; and scholarly materials published over a 5-year period (2019–2023).

We interviewed officials from the U.S. Environmental Protection Agency’s (EPA’s) Office of Air and Radiation, the U.S. Department of Energy’s (DOE’s) Office of State and Community Energy Programs, DOE’s Vehicle Technologies Office, the U.S. Department of Transportation’s Federal Transit Administration and Federal Highway Administration, and the Joint Office of Energy and Transportation to ensure we identified all key federal

programs. We also interviewed stakeholders with expertise in nondiesel-based transportation to ensure that we identified all key federal programs. To identify potential stakeholders, we compiled a list of organizations with expertise in transportation or air quality policy, representing a variety of organization types (e.g., industry/trade associations or research organizations) and experience with federal programs. We selected a nongeneralizable sample of nine stakeholders from this list for interviews based on their experience with nondiesel school buses and federal funding programs. These stakeholders are:

- three organizations that research air pollution or transportation policies, including deployment of nondiesel school buses (CALSTART, Resources for the Future, World Resources Institute);
- two associations focused on student transportation (National Association for Pupil Transportation, National Student Transportation Association);
- one transportation-focused media source focused on school buses (School Transportation News);
- two associations focused on fossil fuels (Propane Education and Research Council, the Transport Project); and
- the Greater Washington Region Clean Cities Coalition.

The views we obtained from this sample of stakeholders are nongeneralizable to all stakeholders with expertise in nondiesel-based transportation.

To examine program implementation, we analyzed federal documents, including Notices of Funding Opportunities, and federal grants and rebates data from FY2019 to FY2024. We also interviewed EPA and DOE officials and a total of nine school districts to examine program implementation. We conducted site visits to eight of the nine school districts in three U.S. Census regions to observe program implementation and to obtain perspectives of school districts and others involved in the application for and use of the federal funds.

For site visits, we selected a nongeneralizable sample of school districts that captured geographic diversity and diversity in fuel type of the alternative school bus (i.e., fuel type diversity). We defined the geographic diversity criterion in terms of population density and subdivided it into two categories: low (rural areas) and high (not rural). We used the National Center for Education Statistics (NCES) classification to identify rural school districts, which is the same

classification that EPA and DOE used to identify school districts in rural areas qualifying for prioritization under their funding programs. We assigned school districts identified with NCES locale codes "43-Rural: Remote" and "42-Rural: Distant" to the low population density category and assigned the other school districts to the high population density category.

We defined the fuel type diversity in terms of tailpipe emission levels, divided into two categories. One category is low emission school buses (e.g., compressed natural gas or propane) and the second category is zero-emission school buses (e.g., electric school buses).

To identify a preliminary list of site visits, we compiled a list of school districts selected to receive awards (federal awardees) from the funding cycles of three of the four key federal programs from FY2019 through FY2023.[1] We reviewed the list of federal awardees based on the two criteria, to the extent that federal agencies made information about the criteria available through the program documents.

To gather a range of perspectives and experiences from the federal awardees regarding application for and use of federal funding that represented geographic diversity and fuel type diversity, we planned to select at least one federal awardee in a rural area, at least one federal awardee in an urban or suburban area, at least one federal awardee that used the funds for an electric school bus, and at least one federal awardee that used the funds for a low emission school bus. We also planned to select a school district that applied for federal funding but did not receive funding for a school bus.[2]

Given that the preliminary list included hundreds of federal awardees meeting selection criteria, which far exceeded our target number of site visits, we used professional judgment to make the final selections in a resource-efficient manner. The team considered additional variation by using optional criteria—such as variation in the program offering the funding, whether EPA or DOE classified the school district as a high-need or low-income school district, and additional geographic diversity (regional variation based on U.S. Census categories). Furthermore, we sought to

[1]We did not consider awardees announced after March 1, 2024, and therefore we did not consider awardees of EPA's Clean Heavy-Duty Vehicle program.

[2]We reviewed EPA's waitlist for the 2022 Clean School Bus Rebate program to identify a school district that applied for but did not receive federal funding.

make efficient use of GAO resources by focusing on federal awardees that met our criteria and that are located in close proximity to GAO staff.

We selected federal awardees that received federal funding, that met overall goals for variation in geography, fuel type, and program, and that were located near GAO staff. The sample of federal awardees we visited are nongeneralizable to all federal awardees. See table 1 for the final list of site visits.

Table 5: Final List of Site Visits

Region (State)	Population Density	Program applied to for funding	Fuel Type Requested	Selected for Funding (Yes/No)	School District
Midwest (Wisconsin)	Not rural	Clean School Bus Grant	Zero emissions	Yes	Milwaukee School District
Midwest (Wisconsin)	Rural	Clean School Bus Rebate	Zero emissions	Yes	Palmyra-Eagle Area School District
South (Delaware)	Not rural	Clean School Bus Grant	Low-emissions and Zero emissions	No	Red Clay Consolidated School District
South (Maryland)	Not rural	Clean School Bus Grant	Zero emissions	Yes	Montgomery County Public Schools
South (Virginia)	Not rural	Clean School Bus Grant	Zero emissions	Yes	Fairfax County Public Schools
West (Colorado)	Not rural	Clean School Bus Rebate	Low- emissions	No	Adams County School District 14
West (Colorado)	Not rural	Diesel Emissions Reduction Act Rebate	Low-emissions	Yes	Boulder Valley School District
West (Colorado)	Rural	Clean School Bus Rebate	Zero emissions	Yes	Big Sandy School District No. 100J

Source: GAO analysis of EPA information. I GAO-25-106887

To examine the extent to which fragmentation, overlap, and duplication exist among federal funding and key programs and any steps federal agencies have taken to address fragmentation, overlap, and duplication, we first applied GAO's evaluation guide to identify the existence of fragmentation, overlap, and duplication.[3] Specifically, we

- gathered background information about the key programs;

[3]GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, GAO-15-49SP (Washington, D.C.: Apr. 14, 2015).

- identified program elements, including program goals, activities, and eligible applicants;
- identified relationships among the fragmented and overlapping programs; and
- confirmed our findings with DOE and EPA.

To gather background information and identify program elements, we reviewed legal requirements, program documents, notices of funding opportunities, and interviews with EPA and DOE officials. We relied on GAO's definition of goals—the intended results or achievements of a program—to compile a list of each key program's goals based on our review of the program documentation and interviews with agency officials.[4] We defined a program activity as a specific activity or project as listed in program documents, such as the authorizing legislation, Notices of Funding Opportunity, agency reports to Congress, and agency descriptions of the programs. We defined eligible applicants as entities or persons that may submit applications to be considered for funding from a key program, as specified in the authorizing legislation or Notices of Funding Opportunity.

To identify the fragmented, overlapping, or duplicative relationships among the key programs, we performed an analysis that compared the similarities and differences in the goals, activities, and eligible applicants. We organized the program goals into categories to facilitate analysis across the programs. Specifically, based on analysis of program documentation, one analyst developed a list of program goals and grouped similar items into logical, broader themes or topics common across similar goals. For example, the category of "reduce emissions" would apply to each program that seeks to reduce air pollution, but the targeted air pollutant may vary by program. A second analyst independently reviewed the list of program goals and the assignment of goals to categories. We reconciled differences in the two analysts' conclusions through refining the descriptions of the goals to ensure accuracy or assigning a goal to a different theme, when appropriate. We applied the same process to identify, synthesize, and analyze the program activities and eligible applicants.

DOE and EPA confirmed our list of the program goals, activities, and eligible applicants. Officials from DOE and EPA reviewed the list and we

[4]GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, 7.

incorporated adjustments as relevant based on their comments. In addition, we interviewed EPA and DOE officials to determine how the agencies managed overlap and fragmentation, including the extent to which agencies coordinate the programs.

To assess the extent to which the agencies track the performance of the key programs, we collected and analyzed agency documentation, such as Notices of Funding Opportunity, and interviewed officials from each agency. Specifically, we examined how agencies track progress toward the program goals identified through our analysis of fragmented and overlapping programs. We identified performance measures of progress toward program goals through reviewing documentation, such as Notices of Funding Opportunity, reporting templates that the agencies use to monitor recipient use of federal funds, and agency reports to Congress. For example, we reviewed the kind of information that DOE and EPA collect from funding recipients and analyzed the extent to which the information supports evaluation of program outcomes.

To identify opportunities to enhance agencies' assessment of program performance, we reviewed GAO's guide to evidence-based policymaking, which identifies 13 key practices for managing and assessing the results of federal programs.[5] References to this work are included in the report where the work is discussed. Two analysts independently reviewed the 13 key practices and associated key actions to determine which leading practices are most relevant to the programs we reviewed. The two analysts met with a third analyst and resolved the disagreement based on further analysis and discussion of how the key practices relate to the engagement's objectives and scope. We applied selected key practices to our analysis by comparing them to our assessment of how agencies track progress toward program goals. Specifically, we compared the agencies' activities to key practices for assessing and building evidence and performance information.

We conducted this performance audit from June 2023 to June 2025, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that

[5]GAO, *Evidence-Based Policymaking: Practices to Help Manage and Assess the Results of Federal Efforts*, GAO-23-105460 (Washington, D.C.: July 12, 2023).

the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Additional Information on Key Federal Programs that Help Fund Nondiesel School Buses

Table 6: Key Elements of the U.S. Environmental Protection Agency's (EPA's) Clean School Bus Program

Element	Description
Program authorization	The Infrastructure Investment and Jobs Act (IIJA) authorized $5 billion from fiscal year (FY) 2022 through 2026 for grants and rebates to replace existing school buses (42 U.S.C. § 16091).
Program appropriation	$5 billion, with $1 billion for each fiscal year (FY2022, FY2023, FY2024, FY2025, FY2026), to remain available until expended. IIJA established conditions under which states may compete for unobligated funds, if any, remaining in any of the 5 fiscal years after EPA issues awards for that fiscal year.
Funding opportunities	Three rebates and one grant, as of January 2025.
Funding obligated	About $2.8 billion to replace about 8,900 school buses, as of January 2025, according to EPA.[a]
Eligible applicants and activities	State and local government entities, and Tribes and tribal organizations responsible for purchasing school buses or providing school bus services (e.g., public school districts or charter schools); third parties seeking funds to replace school buses (e.g., nonprofit school transportation association or eligible contractor). EPA allows recipients to also use funds for bus charging infrastructure, electrician certification, bus warranty, training, and other related expenses.
Prioritization and selection criteria	The IIJA allows EPA to prioritize applicants that serve rural or low-income areas; high-need local educational agencies, schools funded by the Bureau of Indian Affairs, or schools that receive payments for children residing on tribal lands; and schools that propose to leverage additional sources of funding. The IIJA directs EPA to consider the following criteria, without preference for any specific criterion, when awarding Clean School Bus funds: lowest overall cost of bus replacement; local conditions, including length of bus routes and weather conditions; technologies that most reduce diesel emissions; and whether funds will bring new technologies to scale or promote cost parity between old and new technology.

Source: GAO analysis of IIJA legal requirements and EPA information, including interviews with EPA officials. I GAO-25-106887

[a]EPA, *2024 Investing in America Report: Progress under The Bipartisan Infrastructure Law & The Inflation Reduction Act*, EPA-190-R-24-004 (January 2025), 40.

Table 7: Key Elements of the U.S. Environmental Protection Agency's (EPA) Diesel Emissions Reduction Act (DERA) Program

Element	Description
Program authorization	The Energy Policy Act of 2005 authorized $200 million annually for diesel emissions reductions from FY2007 through FY2011, to remain available until expended. The Diesel Emissions Reduction Act of 2010 amended the Energy Policy Act of 2005 and authorized $100 million annually from FY2012 through FY2016, to remain available until expended. The Consolidated Appropriations Act, 2021, authorized $100 million annually through FY2024, to remain available until expended. The Energy Policy Act of 2005, as amended, directs EPA to use 30 percent of the appropriation for the DERA program subject to availability in each fiscal year to the state and territorial diesel emission programs, using an application process and allocation formula. The Energy Policy Act of 2005, as amended, also directs EPA to use the remaining 70 percent of the appropriation, subject to availability, in each fiscal year for competitive grant, rebate, or loan programs to achieve significant reductions in diesel emissions.
Program appropriations	Congress appropriated varying funding levels from FY2008 through FY2024. For example, Congress appropriated $87 million for FY2020, $90 million for FY2021, $92 million for FY2022, $100 million for FY2023, and $90 million for FY2024. Congress has funded DERA through EPA's annual appropriations (State and Tribal Assistance Grants account) and through other statutes. For example, Congress appropriated $300 million through the American Recovery and Reinvestment Act and appropriated part of $50 million through the American Rescue Plan Act of 2021 (ARP) both as supplemental appropriations.[a]
Funding opportunities[b]	Four national grants, four rebates, four state grants, and five tribal and territory grants.
Funding obligated	About $470 million from FY2019 through March 2025, according to EPA officials.
Eligible applicants and activities	Governmental entities (Tribal governments and states or local agencies and school districts), and nonprofit organizations providing pollution reduction services to fleet owners or operators, among other entities, are eligible for national grants, rebates, or loans.[c] U.S. states and territories are eligible to apply for formula-based allocations, referred to as state grants. Tribal governments, intertribal consortia, Alaska Native Villages, and territorial air quality or transportation governmental entities are generally eligible for competitive tribal and territory grants. DERA national competitive grants, rebates, and loans can fund activities to reduce diesel emissions, such as vehicle replacements, retrofits, engine rebuilds, and fuel switching. DERA state grants support state and territorial programs that are designed to significantly reduce diesel emissions.
Prioritization and selection criteria	For the national DERA program, EPA prioritizes funding for projects expected to maximize public health benefits; to serve areas of poor air quality, including areas that experience a disproportionate quantity of air pollution from diesel fleets; to serve areas with highest population density; to maximize cost-effectiveness; and to conserve diesel fuel, among other factors. EPA also requires state and territorial programs to use the same EPA national program prioritization factors for state grants, rebates, and loans.

Source: GAO analysis of legal requirements and EPA information, including interviews with EPA officials. I GAO-25-106887

[a]EPA obligated $6.6 million of the ARP appropriations to eligible school districts and private fleet owners to replace diesel school buses with electric school buses, according to agency officials.

[b]FY2019 DERA program funding opportunities through FY2024 DERA program funding opportunities.

[c]The Energy Policy Act of 2005, as amended authorizes EPA to administer grants, rebates, and loans, but the agency does not currently implement a loan program, according to agency officials. EPA administered a DERA loan program from 2008 through 2010, according to EPA's Third Report to Congress. EPA stated that it did not plan to administer additional loan programs through DERA because the program was not a good mechanism for establishing and administering low-cost financing programs. See EPA, *Third Report to Congress: Highlights from the Diesel Emission Reduction Program*, EPA-420-R-16-004 (February 2016), 16.

Table 8: Key Elements of the U.S. Environmental Protection Agency's (EPA) Clean Heavy-Duty Vehicles Program

Element	Description
Program authorization	The Inflation Reduction Act of 2022 (IRA) authorized $1 billion from FY2022 through FY2031 to replace heavy-duty diesel vehicles, including certain school buses, with zero-emission vehicles. (42 U.S.C. § 7432)
Program appropriation	$1 billion for FY2022, to remain available until September 30, 2031, to replace heavy-duty diesel vehicles, including certain school buses, with zero-emission vehicles. (42 U.S.C. § 7432(a))
Funding opportunities	One grant, as of January 2025.
Funding obligated	$634.1 million obligated as of February 2025, according to agency officials.
Eligible applicants and activities	States, municipalities (including school districts), Indian tribes, and nonprofit school transportation associations are eligible for grants. The FY2024 Clean Heavy-Duty Vehicle grant opportunity includes one grant subprogram for electric school buses and one grant subprogram for electric or hydrogen fuel cell vocational vehicles. Recipients may also use program funds for fueling and charging infrastructure, workforce development, and other related activities.
Prioritization and selection criteria	The IRA directs EPA to make at least $400 million of the $1 billion appropriation available for projects serving at least one community in areas that do not meet federal air quality standards but did not otherwise specify criteria to prioritize and select applications for funding. EPA selected Clean Heavy-Duty Vehicles FY2024 Grant program recipients through an evaluation of application materials and scoring criteria using a point system reflecting statutory requirements and other agency-determined criteria. Additional points were given to projects that include climate resilience, project sustainability, and workforce development activities.

Source: GAO analysis of legal requirements and agency information, including interviews with EPA officials. I GAO-25-106887

Table 9: Key Elements of the U.S. Department of Energy's (DOE) Renew America's Schools Program

Element	Description
Program authorization	The Infrastructure Investment and Jobs Act (IIJA) authorized $500 million from FY2022 through FY2026 to fund energy improvement projects at public schools, including the lease or purchase of alternative fueled school buses (42 U.S.C. § 18831).
Program appropriations	$500 million, with $100 million for each fiscal year (FY2022, FY2023, FY2024, FY2025, FY2026), to remain available until expended.
Funding opportunities	One grant (FY2022–FY2023), and one multiphase funding award (FY2024-–FY2025), as of February 2025.
Funding obligated	About $289 million, including $178 million to 24 recipients for the FY2022–2023 grant, as of February 2025, according to DOE officials. Two of the 24 recipients of a FY2022–2023 grant planned to use a total of $4.6 million for electric school buses, according to DOE officials.
Eligible applicants and activities	Eligible applicants include consortiums comprised of one local educational agency—for example, public board of education—and one or more entities, which may include schools; nonprofit organizations, for-profit entities, and community partners that have the knowledge and capacity to partner and assist schools with energy improvements. Each grant awarded under the FY2022–FY2023 program typically funded several energy improvement activities, such as improvements to a building's heating and cooling system or insulation, and the installation of renewable energy technologies, such as solar panels. School buses fueled by electricity, propane, and compressed natural gas are eligible for Renew America's Schools funding, according to DOE officials we interviewed.
Prioritization and selection criteria	IIJA directs DOE to prioritize applications for schools with improvement funding needs, schools with a high percentage of students eligible for free or reduced-price lunches, schools in rural areas, and schools that leverage private sector funding through performance contracting. DOE reviewed applications for Renew America's Schools funding for the FY2022–2023 grant based on four criteria: (1) need, (2) project benefits and impact, (3) innovation and scalability, and (4) qualifications and workplan. DOE officials interviewed by GAO stated that they selected applications based on factors such as energy efficiency.

Source: GAO analysis of legal requirements and DOE information, including interviews with DOE officials. I GAO-25-106887

Appendix III: Agency Comments

OFFICE OF AIR AND RADIATION
WASHINGTON, D.C. 20460

June 12, 2025

Mr. Alfredo Gómez
Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, D.C. 20548

Dear Mr. Gómez:

Thank you for the opportunity to review and comment on the U.S. Government Accountability Office's draft report, "Diesel Bus Alternatives: Opportunities to Better Assess Progress of Federal Programs," (GAO-25-106887) ("Draft Report"). The purpose of this letter is to provide the U.S. Environmental Protection Agency's response to the Draft Report's findings, conclusions, and recommendations, as well as provide a list of technical corrections.

EPA generally agrees with the GAO's findings, conclusions, and recommendations. The GAO noted that the greatest risks posed by implementation of multiple Federal programs with similar goals are fragmentation, overlap, and duplication. In its review of the four Federal funding programs that fund the replacement of diesel school buses with less polluting buses, three of which are EPA programs, GAO recognized that EPA and DOE have taken various steps to address the effects of fragmentation and overlap associated with the programs. The GAO then provided two recommendations to EPA on how EPA can continue to implement the Clean School Bus program, Clean Heavy-Duty Vehicles program, and the Diesel Emissions Reduction Act programs with minimal risk. EPA's responses to the GAO's two recommendations are outlined below.

GAO Recommendations:

Recommendation 1. The Assistant Administrator of EPA's Office of Air and Radiation should gather complete and timely performance information—through rebate closeout forms or other mechanism—to verify the successful deployment of nondiesel school buses funded by Clean School Bus program rebates and track factors that may hinder progress toward bus deployment.

EPA Response:

EPA agrees with Recommendation 1, which is consistent with work already underway to review Close Out Forms for the 2022 Clean School Bus (CSB) Rebate Program. EPA designed the CSB rebate program to ensure the successful deployment of nondiesel school buses through key program elements, including a requirement for all recipients to submit a Close Out Form to verify that new buses were deployed, and older buses were appropriately dispositioned. The 2022 CSB Rebate Program Close Out Forms were due by October 31, 2024, although recipients could request an extension if needed (e.g., due to delays with infrastructure installation, new bus delivery delays). EPA has been actively and thoroughly reviewing Close Out Forms from 2022 CSB Rebate recipients, which include photos of new nondiesel buses, and any installed infrastructure needed to support the new buses. In addition, EPA is conducting in-person site visits to 2022 CSB Rebate recipients to verify successful deployment of nondiesel school buses. The site visits started in Fall 2024 and are expected to continue, at an increased pace, throughout Summer and Fall 2025. Site visits for subsequent CSB rebate and grant programs will proceed once recipients have deployed their new buses.

EPA anticipates providing information in the upcoming 5th Clean School Bus Report[1] to Congress (due January 2026) that includes: 1) a clear description of the number of new nondiesel school buses deployed under the 2022 CSB Rebate Program, as well as program status updates for subsequent CSB rebate and grant programs, and 2) a discussion on any factors that may hinder progress towards bus deployment. This is consistent with previous Clean School Bus Reports to Congress in which we provided information on program status and progress towards deployment and discussed approaches that we had implemented to address factors that can hinder progress towards deployment. For example, based on data from the 2022 CSB Rebate Program, EPA required applicants in subsequent CSB rebate and grant programs to submit a School Board Awareness form, and, where applicable, a Utility Partnership Agreement and/or Third-Party Agreement form. The intent of each of these forms is to ensure that all parties involved in a new school bus project are aware of the potential new project, which helps avoid project delays if the applicant is selected for funding. The previous Clean School Bus Reports to Congress have also discussed our partnership with the National Renewable Energy Lab (NREL) to provide technical assistance to all CSB funding recipients; this technical assistance supports recipients in planning for successful new bus deployment and also provides one-on-one assistance as needed if there are factors hindering new bus deployment (e.g., contacting bus or charging infrastructure vendors for maintenance support).

Recommendation 2. The Assistant Administrator of EPA's Office of Air and Radiation should develop a methodology to characterize emissions related to charging electric school buses and estimate emission reductions from each of the agency's key programs funding nondiesel school buses.

EPA Response:

EPA generally agrees with the recommendation that methodologies to estimate emissions reductions from each of the Agency's programs funding nondiesel school buses is important and necessary. Developing a methodology to characterize emissions related to charging electric school buses is also of interest, although EPA notes that factors like data availability may impact our ability to develop a methodology to characterize those emissions. EPA recognizes the importance of estimating emissions reductions from key funding programs for nondiesel school buses and has implemented a

[1] Clean School Bus Reports to Congress are posted here: https://www.epa.gov/cleanschoolbus/clean-school-bus-csb-reports-congress

methodology to estimate emissions reductions attributable to vehicle emission sources, including from the tailpipe, evaporative systems, and brake and tire wear that would occur over the operational life of the new, cleaner buses. The results of this methodology for the 2022 CSB Rebate Program are included in the 4th Clean School Bus Report to Congress. However, establishing a methodology to estimate emissions from charging electric school buses would require additional data sources to appropriately characterize emissions from stationary power generation sources.

EPA will continue to actively explore available data and tools to inform a methodology that can appropriately characterize emissions from charging electric school buses with the ability to incorporate estimates of those emissions into our existing methodology for estimating emissions from vehicle sources when appropriate. We will continue to estimate vehicle sources of emissions reductions from key programs, including the 2023 CSB Grant Program, 2023 CSB Rebate Program, and Clean Heavy-Duty Vehicles Grant Program once data from those programs is available. We expect to make updated estimates of emissions reductions from the CSB Program available in upcoming Clean School Bus Reports to Congress, with the next report due in January 2026. We anticipate sharing estimates of emissions reductions from the Clean Heavy-Duty Vehicles Grant Program in a similar type of report or on the program website.

Thank you again for the opportunity to review and comment on the draft report and for the recommendations on enhancing the Clean School Bus program, the Clean Heavy-Duty Vehicles program, and the Diesel Emissions Reduction Act programs. EPA is committed to ensuring that its programs meet their statutory goals while mitigating any potential areas for waste, fraud, and abuse. To ensure the most efficient use of Federal funds and minimize potential programmatic risks, EPA will continue to gather complete and timely performance information and will continue to actively explore available data and tools to inform a methodology to better estimate emissions from vehicle sources.

Sincerely,
ABIGALE TARDIF
Digitally signed by ABIGALE TARDIF
Date: 2025.06.13 13:56:38 -04'00'
Abigale Tardif
Principal Deputy Assistant Administrator

Enclosure

1) OAR Technical Comments to Draft Report GAO-25-106887

cc: EPA GAO Liaison Team
Betsy Shaw
Sarah Dunham
Karl Simon
Michael Moltzen
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Mikayla Steele
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Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

J. Alfredo Gómez at gomezj@gao.gov

Staff Acknowledgments

In addition to the contact named above, Anne Hobson (Assistant Director), Kate Shouse (Analyst in Charge), Caitlin Cusati, John Delicath, Ariel Jona, Mary Koenen, Josie Ostrander, Danny Royer, Celia Sawyerr, Sara Sullivan, Linda Tsang, and Jack Wang made key contributions to this report. Mark Braza, Andrew Edkins, Jordan Kudrna, Barbara Lancaster, Joanie Lofgren, Susan Murphy, Bruna Oliveira, Steven Putansu, Kevin Remondini, Isabel Rosa, Cory Ryncarz, Wesley Sholtes, and Matthew Voit also made contributions to the report.