United States Government Accountability Office

Report to Congressional Committees

December 2024

FEDERAL VEHICLE FLEET

Efforts are Underway to Facilitate the Transition to Zero Emission Vehicles

GAO-25-106972

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GAO Highlights

Highlights of GAO-25-106972, a report to congressional committees

Why GAO Did This Study

Executive Order 14057, issued in December 2021, requires that (1) affected agencies' acquisitions of light-duty vehicles (e.g., sedans, smaller sport utility vehicles, and smaller pickup trucks) must be ZEVs by the end of fiscal year 2027 and (2) all vehicle acquisitions must be ZEVs by 2035.

The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 includes a provision for GAO to review how the costs and benefits of operating and maintaining electric vehicles in the federal fleet compare with those of operating and maintaining gas vehicles. Among other objectives, this report describes (1) how the primary costs and expected benefits of ZEVs compare with gas vehicles in the federal fleet, (2) the types of vehicles that federal agencies acquired and the factors that selected agencies reported would influence whether they can meet the ZEV acquisition goals, and (3) the facilitating agencies' efforts to make progress toward ZEV goals.

GAO reviewed relevant statutes, regulations, and GSA vehicle acquisition data; and interviewed a selection of industry stakeholders and officials at 11 federal agencies. GAO selected a mix of agencies with different fleet characteristics, such as differing fleet sizes and some with law enforcement missions. GAO also reviewed documentation on agencies' efforts to facilitate progress toward ZEV goals and assessed these efforts using selected key performance management and leading interagency collaboration practices.

View GAO-25-106972. For more information, contact David Marroni at (202) 512-2834 or marronid@gao.gov.

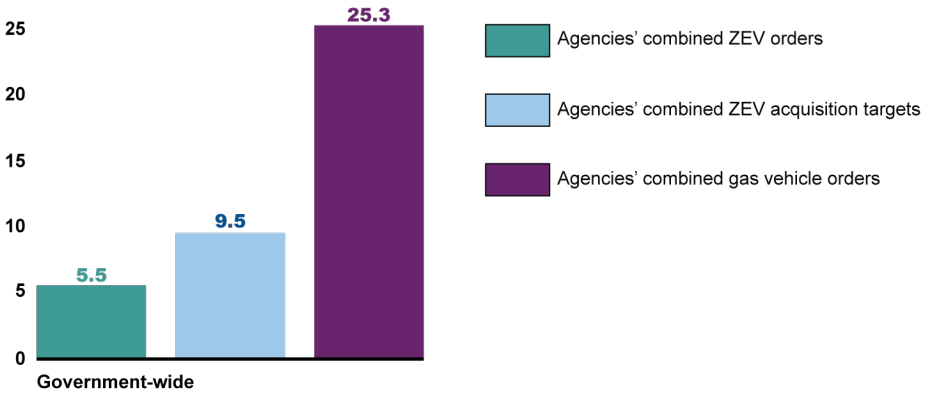
What GAO Found

The cost of Zero Emission Vehicles (ZEV) is generally higher for federal agencies than the cost of gas vehicles, largely due to higher acquisition and monthly lease payments. However, peer-reviewed studies GAO reviewed found that ZEVs offer environmental benefits and may offer reduced maintenance costs. Agency officials GAO spoke with described gas vehicles as more flexible and convenient.

In fiscal year 2023, 11 selected agencies in GAO's review were acquiring mostly gas vehicles for their fleets. Officials from most selected agencies told GAO they believe that their ability to meet the ZEV acquisition goals established by Executive Order 14057 will depend on factors outside their control, including the availability of ZEVs that match their mission needs. Agencies did not meet their combined self-set targets for fiscal year 2023 to acquire almost 9,500 light-duty ZEVs through the General Services Administration (GSA). Instead, they acquired about 60 percent of this combined target (see fig.).

Agencies' Combined Light-Duty Zero Emission Vehicles (ZEV) Orders Compared with Targets and Gas Vehicle Orders, Fiscal Year 2023

Number of light-duty vehicles (approximate, in thousands)



Source: GAO analysis of General Services Administration information. | GAO-25-106972

Three federal agencies are considered the main "facilitating agencies" for the ZEV transition—the Council on Environmental Quality, the Department of Energy (Energy) and GSA. GAO found that these three agencies have various collaboration and other efforts to facilitate the ZEV transition. For example, their efforts aimed at helping to foster collaboration and learning among other federal agencies include establishing multiple working groups and hosting an annual training conference. The three agencies also are collecting data and feedback to improve their assistance to federal agencies. For example, Energy updated a ZEV acquisition decision-making tool to allow for multiyear planning based on federal agency user feedback.

Contents

Abbreviations

CEQ	Council on Environmental Quality
DOE	Department of Energy
EVSA	Electric Vehicle Suitability Assessment
EVSE	Electric Vehicle Supply Equipment
FAST	Federal Automotive Statistical Tool
GSA	General Services Administration
OMB	Office of Management and Budget
ZEV	Zero Emission Vehicle
ZPAC	Zero-Emission Vehicle Planning and Charging

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Congressional Committees

The number of electric vehicles and other Zero Emission Vehicles (ZEV) sold in the U.S. has increased substantially. In 2018, electric vehicles made up almost 2 percent of the approximately 17.3 million new light-duty vehicles sold; in 2023, that percentage had increased to about 9 percent of the estimated 15.6 million such vehicles sold.[1] While sales of electric vehicles have increased, more than 90 percent of the light-duty vehicles sold in the U.S. in 2023 were gas-powered internal combustion engine vehicles (gas vehicles).[2]

Executive Order 14057, issued by the Biden Administration in December 2021, requires that (1) executive agencies' acquisitions of light-duty vehicles (e.g., sedans, smaller sport utility vehicles, and smaller pickup trucks) must be ZEVs by the end of fiscal year 2027 and (2) all vehicle acquisitions must be ZEVs by 2035.[3] This order affects about 421,000 vehicles in the federal fleet. As required by this order, the Office of Management and Budget (OMB) and the Council on Environmental Quality (CEQ) issued a memorandum and guidance, respectively, that provide further direction and requirements for agencies to meet the

[1]These figures are based on Transportation Energy Institute data, including sales of both battery electric vehicles and plug-in hybrid electric vehicles. Light-duty vehicles include passenger vehicles, such as compact vehicles and minivans.

[2]We define gas vehicles as any vehicle with an internal-combustion engine (other than plug-in hybrid electric vehicles), including vehicles powered by diesel gasoline and flex-fuel vehicles.

[3]For the purposes of Executive Order 14057, a light-duty vehicle is a vehicle of up to, and including, 8,500 pounds gross vehicle weight (i.e., the weight of the empty vehicle plus the weight of the maximum payload that the vehicle is designed to carry) and certified for use on all public roads and highways. See Office of Management and Budget, M-22-06, *Catalyzing Clean Energy Industries and Jobs through Federal Sustainability* (Dec. 8, 2021). The executive order only applies to acquisitions by executive agencies, as defined by 5 U.S.C. § 105, excluding independent regulatory agencies, as defined in 44 U.S.C. § 3502(5). The U.S. Postal Service is not subject to the executive order, because, under 5 U.S.C. Chapter 1, it is excluded as an independent establishment and, therefore, is not an executive agency. The order also authorizes affected agencies' heads to exempt certain vehicles in their fleets, such as combat support and military tactical vehicles, from its provisions. See Executive Order 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability* (Dec. 8, 2021).

policies and goals of the order.[4] These documents define a ZEV as any vehicle that, when operating, produces zero tailpipe exhaust emissions of certain pollutants or greenhouse gases. ZEVs include battery electric vehicles and plug-in hybrid electric vehicles (which together make up almost all ZEVs available in the U.S.) and fuel cell electric vehicles, which are nascent and not widely available or deployed.[5]

The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 included a provision for GAO to submit a report on how the costs and benefits of operating and maintaining electric vehicles in the federal fleet compare with those of operating and maintaining gas vehicles.[6] This report describes (1) how the primary costs and expected benefits of ZEVs compare with those for gas vehicles in the federal fleet; (2) how selected agencies are determining which ZEVs and gas vehicles to acquire; (3) the types of vehicles that federal agencies acquired and the factors that selected agencies reported would influence whether they can meet the ZEV acquisition goals; and (4) efforts by CEQ, the General Services Administration (GSA), and the Department of Energy (DOE) to facilitate agencies' progress toward the ZEV acquisition goals.

To address all four objectives, we reviewed applicable statutes, regulations, executive orders, OMB memorandums, and implementing guidance. We reviewed GSA vehicle fleet data and the fleet guidance available to federal fleet managers, conducted a literature review on the costs and expected benefits of ZEVs and gas vehicles, and reviewed GSA and DOE cost data from fiscal year 2023.[7] For the primary costs of ZEVs and gas vehicles, we included the costs that are paid by the federal agencies. This includes acquisition and other upfront costs, fuel costs, and maintenance and repair costs. We excluded costs that would not be

[4]See Office of Management and Budget, M-22-06, *Catalyzing Clean Energy Industries;* and Council on Environmental Quality, *Implementing Instructions for Executive Order 14057* (Aug. 2022). CEQ, within the Executive Office of the President, coordinates the federal government's efforts to improve, preserve, and protect environmental quality to meet goals related to America's public health and environment.

[5]Fuel cell electric vehicles are powered by hydrogen and emit water vapor and warm air. They are fueled by pure hydrogen gas stored in a tank on the vehicle, according to DOE. These vehicles are in the early stages of implementation, and there are few hydrogen stations in the U.S.

[6]Pub. L. No. 117-263, § 7234, 136 Stat. 2395, 3677 (2022).

[7]These were the most recent data available at the time of our review.

paid directly by federal agencies, such as disposal costs and the costs related to energy generation and fuel generation.

We interviewed officials from CEQ, DOE, and GSA about their efforts to help federal agencies transition their fleets to ZEVs. We also selected a nongeneralizable sample of five federal agencies with vehicle fleets to interview.[8] We selected a mix of agencies with different sized fleets, some that mostly own and some that mostly lease their vehicles, and some with law enforcement responsibilities. For the three departments in our selection, we also interviewed officials in one or two agencies within the department, for a total of 11 federal agencies with vehicle fleets.[9] To gain broader perspectives on this issue, we interviewed four automakers and four nonfederal fleet operators.[10] Further, we conducted interviews and reviewed agency documents and data to identify the key efforts by CEQ, DOE, and GSA to facilitate the federal government's progress toward ZEV goals. Finally, we assessed these agencies' efforts against selected

[8]For the purposes of this report, we use the term agency to include executive branch agencies and components within agencies. We selected the Department of Homeland Security, Department of Transportation, Tennessee Valley Authority, U.S. Department of Agriculture; and two agencies in the Department of Defense: the Defense Logistics Agency and the U.S. Army Corps of Engineers.

[9]The three departments in our selection are the Department of Homeland Security, Department of Transportation, and U.S. Department of Agriculture. Within these respective three departments, we interviewed officials from Customs and Border Protection, the Federal Emergency Management Agency, Immigration and Customs Enforcement, the Federal Highway Administration, and the Natural Resources Conservation Service.

[10]The automakers were Ford, General Motors, Stellantis, and Toyota, and the nonfederal fleet operators were Hertz, Enterprise, New York City, and the city of Seattle. We selected four automakers that produce electric and gas vehicles and supply these vehicles to the federal fleet. We selected nonfederal fleet operators familiar with deploying electric vehicles.

GAO performance management practices and interagency collaboration practices.[11]

Our scope includes defense nontactical vehicles (those not designed for use in combat), such as commercial vehicles that carry passengers or cargo.[12] We excluded postal vehicles from the scope of this review because Executive Order 14057 does not apply to the U.S. Postal Service[13] and because we recently issued a report related to electrification efforts for postal vehicles.[14] For more details and information about our objectives, scope, and methodology, see appendix I.

We conducted this performance audit from July 2023 to December 2024 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.

[11]Specifically, we used 10 of the 13 key practices outlined in GAO, *Evidence-Based Policymaking: Practices to Help Manage and Assess the Results of Federal Efforts*, GAO-23-105460 (Washington, D.C.: July 12, 2023) that we deemed relevant for this review. We refer to these as performance management practices because they can help federal agencies to manage the performance of efforts. The 10 practices we used relate to fostering a culture of learning; and collecting, assessing, and using data. We determined that three practices do not relate to the three facilitating agencies' ZEV-related efforts and, thus, we did not use them for our assessment. We also used four of the eight key interagency collaboration practices outlined in GAO, *Government Performance Management: Leading Practices to Enhance Interagency Collaboration and Address Crosscutting Challenges*, GAO-23-105520 (Washington D.C.: May 24, 2023). We determined that the other four interagency collaboration practices do not relate to the three facilitating agencies' ZEV efforts and, thus, did not use them for our assessment.

[12]Nontactical vehicles are defined, in part, as vehicles not designed for use in combat. See 10 U.S.C. § 2922g.

[13]The executive order only applies to acquisitions by executive agencies, as defined by 5 U.S.C. § 105, excluding independent regulatory agencies, as defined in 44 U.S.C. § 3502(5). The U.S. Postal Service is not subject to the executive order because, under 5 U.S.C. Chapter 1, it is excluded as an independent establishment and, therefore, is not an executive agency.

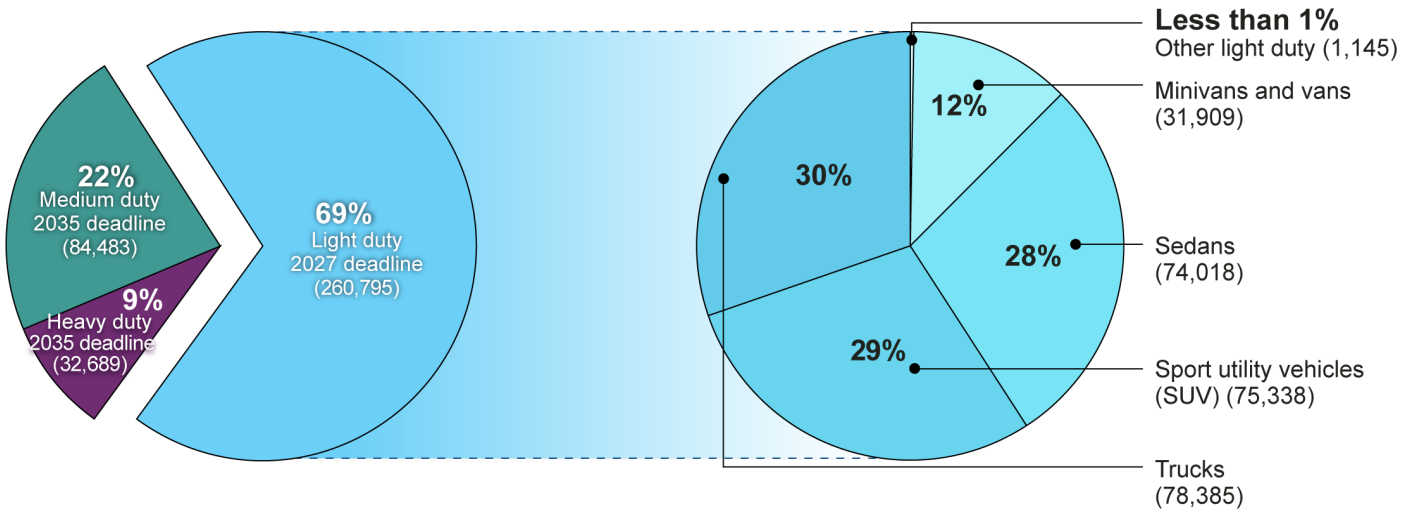
[14]See GAO, *U.S Postal Service: Action Needed to Improve Credibility of Cost Assumptions for Next Generation Delivery Vehicles*, GAO-23-106677 (Washington, D.C.: Apr. 20, 2023).

Background

Federal Vehicle Fleet

The federal fleet consists of vehicles that are either owned or leased by a federal agency; almost half (about 49 percent) of the passenger vehicles in the affected fleet are leased. When it was issued in 2021, Executive Order 14057 contained goals that affected approximately 380,000 nonpostal and nontactical vehicles in the federal fleet as they become subject to replacement. Federal fleet vehicles range in size and include light-duty, medium-duty, and heavy-duty vehicles.[15] Figure 1 shows the composition of federal fleet vehicles affected by this order as of fiscal year 2021, the year the order was issued.

Figure 1: Composition of the Federal Fleet Affected by Executive Order 14057, as of Fiscal Year 2021, by Type of Vehicle



Source: GAO analysis of General Services Administration data. | GAO-25-106972

Note: Executive Order 14057 applies to acquisitions by executive agencies, as defined under 5 U.S.C. § 105, excluding independent regulatory agencies, as defined under 44 U.S.C. § 3502(5). This executive order does not apply to vehicles owned by the U.S. Postal Service and authorizes affected agencies' heads to exempt certain vehicles, such as those used for combat support, from its provisions. For the purposes of the executive order, the term light-duty vehicle means a vehicle of up to, and including, 8,500 pounds gross vehicle weight (i.e., the weight of the empty vehicle plus the weight of the maximum payload that the vehicle was designed to carry) and can include cars, smaller

[15]For the purposes of the executive order, a light-duty vehicle can include cars, smaller pickup trucks, minivans, vans, and smaller sport utility vehicles. Medium-duty vehicles are of gross weight between 8,500 and 16,000 pounds, such as larger pickup trucks. Heavy-duty vehicles are a gross weight of 16,000 pounds and above, such as semi trucks. These three vehicle types are further defined as certified for use on all public roads and highways. See Office of Management and Budget, M-22-06, *Catalyzing Clean Energy Industries.*

pickup trucks, minivans, vans, and smaller sport utility vehicles. Medium-duty vehicles are vehicles with a gross weight between 8,500 and 16,000 pounds, such as larger pickup trucks. Heavy-duty vehicles are of a gross weight of 16,000 pounds and above, such as semi trucks. These three vehicle types are further defined as certified for use on all public roads and highways. See Office of Management and Budget, M-22-06, *Catalyzing Clean Energy Industries and Jobs through Federal Sustainability* (Dec. 8, 2021).

Federal Agencies with Responsibilities for the Transition to ZEVs

Executive Order 14057 requires agencies subject to the order to propose targets, including annual progress targets, where applicable, to meet the order's goals and requirements for acquiring ZEVs and deploying charging stations.[16] Agencies with a fleet of 20 or more vehicles must develop, annually update, and submit to CEQ a data-driven strategic plan (ZEV Strategic Plan) that includes proposed annual ZEV acquisition and charging station deployment targets. Agencies are responsible for meeting their specific targets. In addition, OMB guidance directs affected agencies to ensure that their annual budget requests to Congress reflect the budget data from their respective ZEV Strategic Plans.[17] We also reported that 30 federal agencies are required to submit ZEV Strategic Plans; vehicles from 26 of these agencies accounted for over 99 percent of the fleet vehicles subject to the order.[18]

CEQ, DOE, and GSA have key roles in facilitating the overall transition from gas vehicles to ZEVs for the federal fleet, so in this report we refer to them as the "facilitating agencies." The facilitating agencies' roles and efforts to assist agencies with the ZEV transition include the following:

- CEQ and OMB review and approve the affected agencies' proposed targets for ZEV acquisition and charging equipment deployment and the agencies' respective required annual ZEV Strategic Plans. To assist agencies with setting targets in their annual ZEV Strategic Plans, CEQ, DOE, and GSA provide agencies with relevant

[16]For the purposes of this report, a charging station is a site with one or more electric vehicle charging ports. A port is the infrastructure that provides power and can charge only one vehicle at a time, although it may have multiple connectors.

[17]We reported that OMB revised instructions for the motor vehicle fleet report, which is part of the agencies' budget request, in August 2022 to include updated guidance for the content of agencies' budget requests to reflect Executive Order 14057. OMB's updated fleet data reporting guidance provides that to the extent possible, agencies' fleet budget submission data and plan narratives should be consistent with their ZEV Strategic Plans. See GAO, *Federal Fleets: Zero-Emission Vehicle Implementation*, GAO-23-105350 (Washington, D.C.: July 19, 2023).

[18]GAO-23-105350.

information, including the estimated costs for acquiring different types of vehicles and installing various types of charging infrastructure.

- DOE's Federal Energy Management Program's primary roles related to the ZEV transition include providing ZEV guidance and maintaining the Federal Automotive Statistical Tool (FAST), the only government-wide collection site for agency-reported data on the federal fleet. Through the Federal Energy Management Program, DOE also provides technical assistance, resources, and tools to help the transition.
- Agencies must report into FAST, on an annual basis, asset- or vehicle-level fleet data. Agencies also annually submit an inventory of their fueling centers and electric vehicle charging stations. They must also report quarterly on the status of ongoing electric vehicle charging station projects in FAST, in part to track progress toward ZEV goals. The facilitating agencies use FAST for various purposes. For example, DOE uses it to assess agencies' compliance with fleet energy requirements.
- GSA has multiple efforts to help federal agencies transition to using ZEVs, which continue the agency's longstanding efforts to increase the fuel efficiency of vehicles in the federal fleet. GSA is generally the mandatory source for the purchase of most vehicles for executive agencies.[19] GSA also provides guidance for agencies related to managing their fleets, including policies for vehicle replacement and requirements for information systems to manage fleets.

GSA Efforts to Modernize the Federal Fleet

GSA has broad efforts to modernize the federal fleet, by

- *facilitating federal agencies' use of leased vehicles.* According to GSA officials, when federal agencies lease their vehicles through GSA, then the vehicles are regularly replaced, providing for a safe and reliable fleet, as well as minimizing the total cost of ownership. In addition, GSA uses automated management systems that, according to GSA, provide benefits, including improved fleet management and more predictable budget planning. GSA has minimum standards for

[19]This is for nontactical vehicles, which are those not used for combat purposes. Agencies also may lease vehicles through GSA or, depending on the vehicle type and their statutory authorities, commercially lease vehicles independently. See 41 C.F.R. §§ 101-26.501-9, 101-39.204.

replacing vehicles leased from GSA, which vary by vehicle type.[20] These standards specify the minimum number of years in use or miles traveled, as applicable, at which agencies may replace such vehicles. For example, gas passenger vehicles may be replaced at 5 years or 60,000 miles. Electric passenger vehicles can each have different minimum replacement standards, ranging up to 7 years and varying miles. For its leased vehicles, GSA charges agencies a fixed monthly rate and mileage fees that vary based on vehicle use;[21]

- *installing telematics on vehicles.*[22] Telematics is technology that can track the operational data on a vehicle, such as driver behavior and fuel use. GSA policy requires telematics to be installed (1) on all newly acquired GSA-leased vehicles and (2) on all preexisting leased vehicles by 2026;[23] and
- *upgrading its fleet management system.* GSA has recently upgraded its fleet management system, in part, to improve federal fleet managers' experience with using those systems, according to agency officials. For example, GSA officials reported that the agency recently replaced its AutoChoice online ordering tool and its GSA Drive-Thru systems—which fleet managers use to order fleet vehicles and for other purposes—with a more user-friendly GSAFleet.gov website.

[20]See General Services Administration, *GSA Fleet Minimum Vehicle Replacement Standard* (Nov. 2022). GSA has also issued minimum vehicle replacement standards for agency-owned vehicles, which are located in 41 C.F.R. Part 102-34, Subpart E.

[21]GSA's mileage fees for leased vehicles include fees based on the miles traveled during that month, multiplied by a set mileage rate per mile, which is determined by the type of vehicle.

[22]"Telematics" refers to a technology that combines telecommunications and information processing to send, receive, and store information related to remote objects, such as vehicles. Vehicle telematics systems connect participating vehicles via a cellular connection to a backend server and can be used to track operational data on vehicles, such as driver behavior, fuel use, and idling.

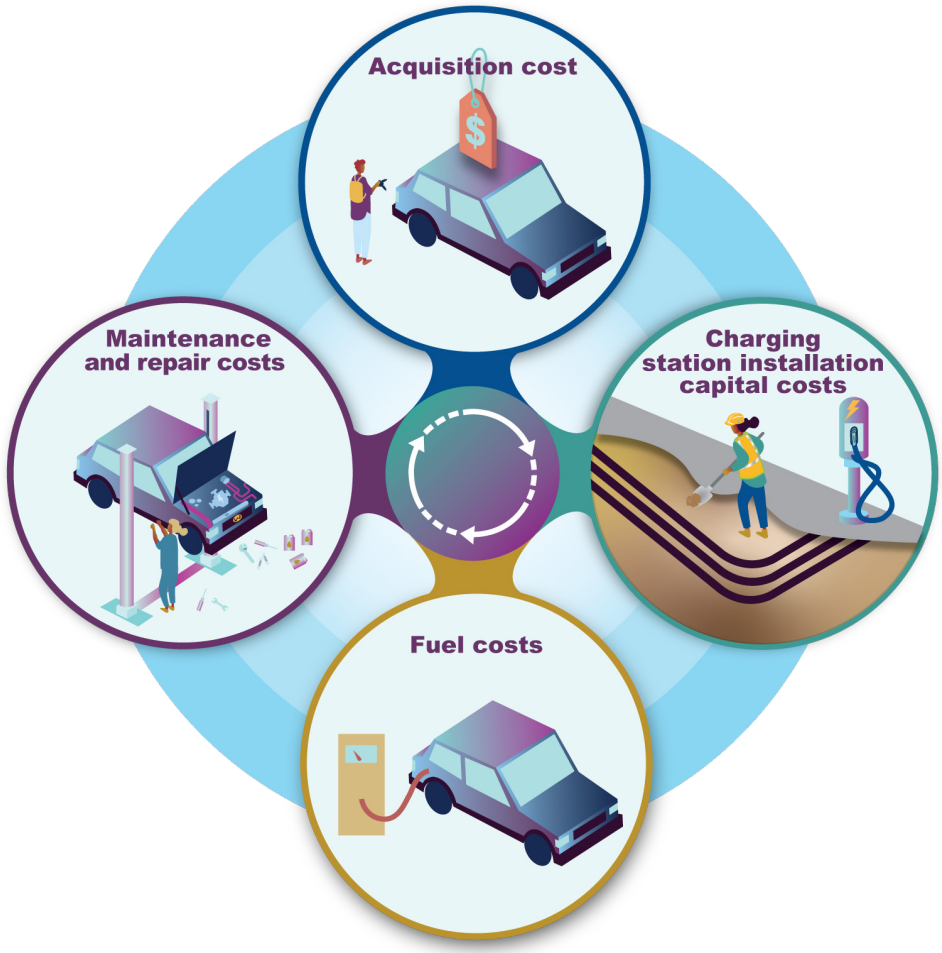
[23]CEQ's Implementing Instructions for Executive Order 14057 also require other agencies to deploy telematics on agency-owned vehicles on at least the same timeline as this GSA policy.

Types of Costs for Federal Fleet Vehicles

Federal agencies pay several types of costs for the vehicles in their fleets, as shown in figure 2.[24]

[24]There are other costs associated with the production of gas and electric vehicles, including disposal costs and other environmental costs. For example, as we reported in 2019, according to DOE's alternative-fuels data center, the disposal of batteries used in electric and hybrid-electric vehicles can result in hazardous materials entering the waste stream. Work is under way to develop battery recycling processes that minimize the life-cycle effects of such batteries. See GAO, *Federal Vehicle Fleets: Agencies Have Continued to Incorporate Alternative Fuel Vehicles into Fleets, but Challenges Remain*, GAO-19-397 (Washington, D.C.: Aug. 26, 2019). According to DOE, as electric vehicles become increasingly common, the battery-recycling market may expand. However, we did not include these costs in our review since federal agencies leasing or purchasing their vehicles through GSA do not pay these costs.

Figure 2: Examples of Costs for Federal Fleet Vehicles (gas and zero emission)



Source: GAO illustration and analysis of federal fleet cost. | GAO-25-106972

- *Acquisition costs.* The costs to acquire the vehicle, including the purchase price. Federal agencies pay different acquisition costs for owned and leased vehicles. For owned vehicles purchased through GSA, federal agencies pay the set purchase price provided by GSA. GSA receives a discount from automakers for vehicles due to the large number of vehicles the agency orders. For leased vehicles, in addition to a fixed monthly rate and mileage fee for each vehicle, agencies that lease ZEVs also pay GSA a monthly fee that enables GSA to recover the overall incremental cost of acquiring ZEVs, along

with other alternative-fuel vehicles, for the agencies.[25] In this context, the incremental cost is the difference between the higher costs of acquiring alternative fuel vehicles and the lower costs of acquiring comparable gas vehicles.[26] GSA must allocate this incremental cost across the agency's entire leased federal fleet.[27] According to GSA officials, GSA generally assesses this monthly fee at the agency level and provides annual guidance to agencies that includes the monthly fee amount for the fiscal year.[28]

- *Charging station installation costs.* The costs to purchase charging equipment and installation costs, such as labor costs.[29] Federal agencies pay these costs if chargers are installed on agency property, according to GSA officials.
- *Fuel costs.* The costs to power the vehicle, including for purchasing gasoline for gas vehicles and electricity for charging ZEVs. For owned vehicles, agencies pay these costs. For leased vehicles, agencies pay GSA for the gas used in their vehicles through the mileage rate. While, according to GSA officials, agencies will be responsible for paying the cost of electricity for battery electric vehicles beginning in fiscal year 2025, GSA currently pays for these costs when vehicles are charged at a public charging station.
- *Maintenance and repair costs.* These are costs related to keeping the vehicle in good working condition, such as replacing tires and brakes. For owned vehicles, agencies pay these costs. For leased vehicles, these costs are included in the monthly costs and mileage rates GSA sets. Those rates vary by vehicle.

[25]GSA is required to recover, so far as practicable, the costs it incurs in providing motor vehicles and related services to executive agencies. See 40 U.S.C. § 605(b).

[26]See 42 U.S.C. § 13212(c). However, the cost of acquiring an alternative fuel vehicle may be the same as acquiring a comparable gas vehicle, according to GSA. See General Services Administration, *GSA Fleet Customer Leasing Guide* (Jan. 22, 2020). Thus, there may be alternative fuel vehicle acquisitions that do not contribute to this incremental cost.

[27]See 42 U.S.C. § 13212(c).

[28]See General Services Administration, *GSA Fleet Customer Leasing Guide*. Thus, according to GSA officials, this fee is assessed to over the year in which the alternative fuel vehicles, including ZEVs, are ordered by GSA.

[29]Agencies also rely on existing infrastructure to fuel gas vehicles, including agency-owned and publicly available gas stations.

ZEVs Generally Cost More but Offer Environmental Benefits Compared with Gas Vehicles in the Federal Fleet

We found that acquisition costs for ZEVs are higher than gas vehicles and that these costs are generally not offset by lower maintenance costs for ZEVs. In addition, the costs that agencies pay to install charging infrastructure depend on several factors, including the type of charging port installed and the location. ZEVs offer lower fuel costs than gas vehicles, as well as environmental benefits, while officials in selected federal agencies reported that gas vehicles are more convenient to use and refuel.

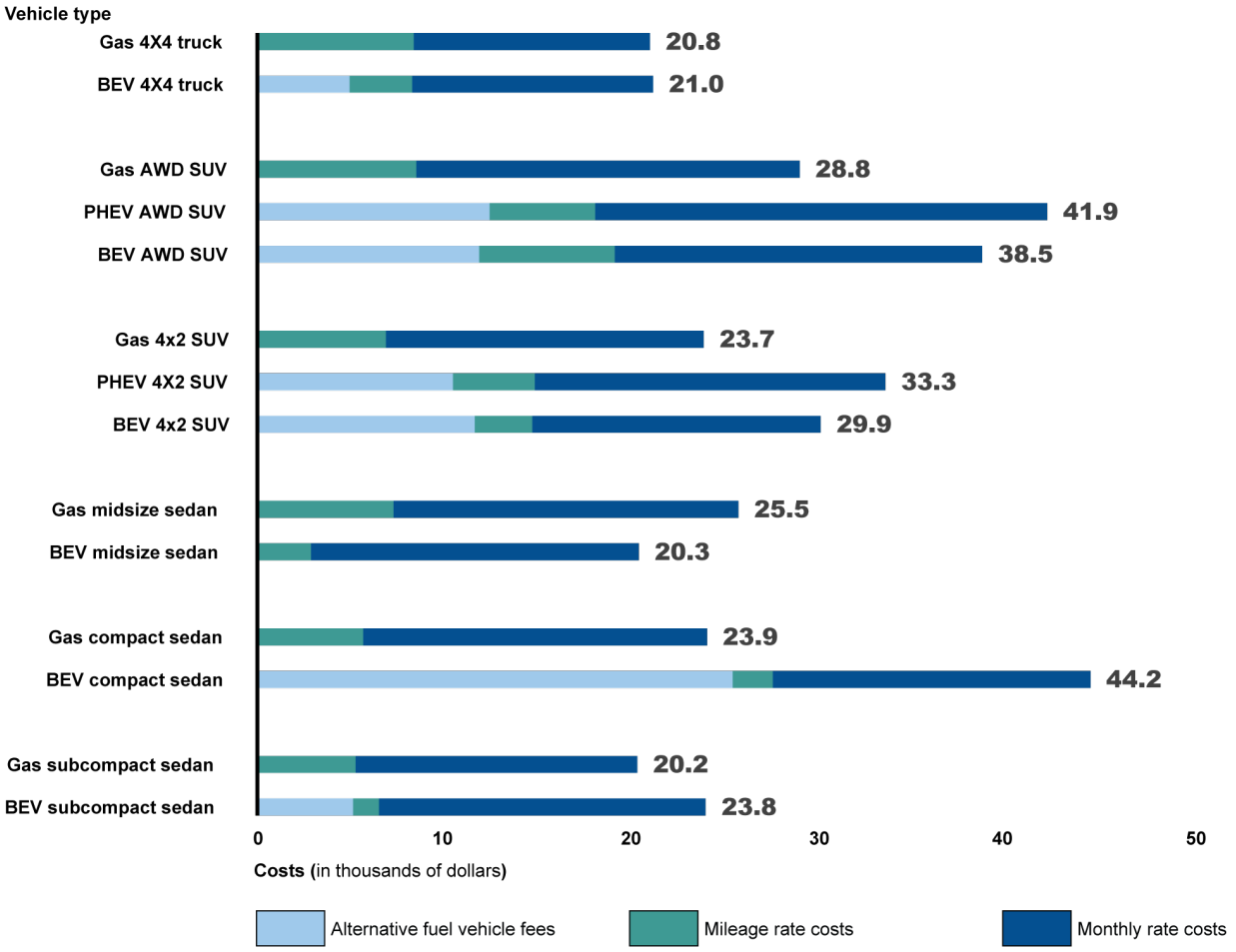
Higher Acquisition Costs of ZEVs Are Generally Not Offset by Savings in Fuel and Maintenance Costs

We found that the total costs of leasing vehicles in the federal fleet are generally higher for ZEVs than for gas vehicles.[30] The higher costs to acquire leased ZEVs are not offset by lower maintenance costs included in the mileage rates that agencies pay on a monthly basis. We came to this conclusion based on our analysis of leased ZEV and gas vehicles over the life of their 5-year leases; leased vehicles make up most of the passenger federal fleet.[31] Although our analysis showed that one ZEV sedan had a lower cost over a 5-year lease than gas sedans, most ZEVs had a higher cost with the addition of the incremental costs as part of the alternative fuel vehicle fees that come from higher upfront costs. For example, we found the estimated lowest cost to acquire and operate a leased Battery Electric Vehicle sedan through GSA across 5 years beginning in fiscal year 2024 ranged from $20,258 to $44,231. Gas versions of similar sedans ranged from $20,173 to $25,545. The only ZEV sedan offered with a lower cost over a 5-year lease than a gas vehicle was a midsize sedan that had no additional upfront or incremental costs and lower mileage rates than other sedans. Figure 3 shows our analysis of the costs of several gas models and certain types of ZEV vehicles available from GSA during fiscal year 2024.

[30]We have previously reported that the average costs for agencies to lease electric vehicles, whether battery electric or plug-in, were much higher than the costs to lease gas vehicles. For example, in 2019, we reported that the average cost of selected subcompact battery electric vehicles over a 5-year lease period was roughly twice that of gas vehicles, with an average cost of $33,060. See GAO-19-397.

[31]We focused on leased vehicles because these make up most of the vehicles in the federal fleet (excluding U.S. Postal Service and nonpassenger vehicles). Also, as previously mentioned, each cost category, except for charger installation costs, is included in the different fees that agencies pay for leased vehicles. For example, maintenance and repair costs are included in the monthly charges as part of the mileage rates that GSA charges. For this analysis, we estimated the average annual mileage for sedans, vans, and sport utility vehicles to be 8,050 miles and 6,646 miles for light-duty trucks in the federal fleet, using GSA's fiscal year 2023 Federal Fleet Report for this analysis.

Figure 3. Comparison of the Lowest Total Costs for 5-Year Lease of Different Types of Select Gas and Zero Emission Vehicles (without charger installation costs)



Source: GAO analysis of General Services Administration data. | GAO-25-106972

Notes: We compared the lowest-cost vehicles for fiscal year 2024 across six types of Zero Emission Vehicles (ZEV) and gas vehicles: subcompact, compact, midsize sedans, 4X2, all wheel drive (AWD) sport utility vehicles (SUV) and 4X4 trucks. Costs include alternative-fuel vehicle surcharges, monthly lease costs, and mileage rates for different types of gas and plug-in hybrid electric vehicles (PHEV), and battery electric vehicles (BEV). In this context, incremental cost is the difference between the higher cost of acquiring alternative fuel vehicles, which include ZEVs, and the lower cost of acquiring comparable gas vehicles. GSA recovers this incremental cost by assessing a monthly fee on each leased vehicle of the agency, regardless of whether the leased vehicle is an alternative fuel vehicle or not. According to GSA, GSA generally assesses this monthly fee at the agency level and provides agencies with annual guidance that includes the monthly surcharge amount for the fiscal year. Monthly lease rates and mileage rates are set by GSA and include acquisition costs, resale proceeds, telematics, maintenance, fuel, repair, and other administrative costs recovered by GSA. We estimated the average annual mileage for sedans, vans, and SUVs to be 8,050 miles and 6,646 miles for light-duty trucks in the federal fleet, using GSA's Fiscal Year 2023 Federal Fleet Report data.

We did not include the costs associated with installing chargers in this analysis, as each ZEV could require a different level of charger, depending on number of miles driven or use. Also, chargers will likely last more than 5 years.

More broadly, depending on the type of vehicle and whether it is purchased or leased, agencies are responsible for different costs that could result in ZEVs being more or less expensive compared with gas vehicles. As we have previously described, these different cost categories for vehicles in the federal fleet include costs for acquisition, charging station installation, fuel, and maintenance and repair.[32]

Acquisition Costs

We found that agencies generally faced higher acquisition costs for ZEVs than gas vehicles.

- For *leased vehicles*, we found the average cost to lease a ZEV was higher because, in addition to higher monthly lease rates, agencies are also responsible for the incremental costs of ZEVs as part of the alternative fuel vehicle fees.[33] These incremental costs that agencies paid GSA for a ZEV in fiscal year 2024 ranged from $0 for a Hyundai Ionic 6 sedan to $28,193 for a Tesla Model Y. Some agency officials we spoke with described these higher incremental costs as barriers to leasing ZEVs. For example, one agency official stated that incremental costs added on average between $8,000 and $12,000 per year. While these charges are allocated across the agency's entire leased fleet, agency officials said they consider these costs when leasing specific vehicles and, as we previously reported, agencies may increasingly consider these costs as they transition to more ZEVs in the federal fleet.[34] Also, the average fixed monthly leased rates, which include acquisition, are generally higher for ZEVs than gas vehicles. For example, the average monthly rate for a leased ZEV sedan was $291 per month, while the average monthly lease rate for a gas sedan was $269 per month.
- For *purchased vehicles*, we found the average cost to purchase ZEVs through GSA was generally higher than for gas versions of vehicles.

[32]GAO-19-397.

[33]As previously mentioned, GSA assesses a monthly fee on each leased vehicle of the agency to recover the incremental cost of acquiring ZEVs and other alternative fuel vehicles for the agency to lease. The incremental cost is the difference between the higher cost of acquiring alternative fuel vehicles and the lower cost of acquiring comparable gas vehicles.

[34]GAO-19-397.

For example, the average purchase price for ZEV 4X2 sport utility vehicles was $41,008, and the gas version was $38,828, while the all-wheel drive version of the ZEV sport utility vehicle was roughly $11,000 more expensive than the gas version. The only subcompact ZEV sedan available in June 2024 for purchase through GSA had a price of $27,715, while the least-expensive subcompact gas vehicle cost $22,427, roughly $5,000 less.

Some automakers, agency officials, and stakeholders we interviewed, as well as studies we reviewed, predicted that prices for ZEVs will decline. Regarding the federal fleet specifically, a 2023 report by the Department of Defense found that the initial costs for electric vehicles will likely fall and predicted that, by 2032, the costs for most ZEVs in the federal fleet will be minimal or negative, when compared with other vehicles.[35] However, the extent of the decline will largely depend on a number of factors, including ZEVs being more widely adopted, improvements in battery technology, and decisions by policymakers and auto manufacturers. Specifically, one study predicted that (1) ZEVs would not reach cost parity with gas vehicles until after 2030 without different policy initiatives in place; and (2) costs would vary, depending on where the vehicles are purchased and used.[36] This study also found that the cost of compliance with emission standards will continue to increase the price of gas vehicles during the same time frame.

Charging Station Installation Costs

Most of the 11 agency officials we spoke with said they could not realistically estimate charger installation costs across their fleet because there is limited information on the cost of deploying charging infrastructure at federal facilities. Agency officials we spoke with described how these costs vary widely, depending on the type of charger installed and the site to be used, making it difficult to estimate average costs for a key factor in their decision to purchase or lease ZEVs. However, agencies did provide a few examples, including the following:

[35]Office of the Under Secretary of Defense for Acquisition and Sustainment. *Report Comparing Electric and Other Alternative Non-Tactical Vehicles with Internal Combustion Engine Vehicles* (Mar. 2023).

[36]Debapriva Chakraborty, Koral Buch, and Gil Tal, "Cost of Plug-in Electric Vehicle Ownership: The Cost of Transitioning to Five Million Plug-In Vehicles in California," Working Paper Series (University of California Davis: Institute of Transportation Studies, 2021).

- One agency official estimated the cost of installing charging infrastructure to be about $66,000 to install a Level 2 charging port at an agency site and $155,000 to install a DC Fast Charging port.[37]
- Officials at another agency cited its inventory of aging buildings when estimating the costs of charging infrastructure to be between $50,000 and $75,000 per port due to the associated substantial electrical upgrades needed to support charging stations.
- Officials at a third agency estimated that Level 2 chargers will likely cost the agency between $10,000 and $40,000, whereas DC Fast Charging ports cost upwards of $225,000 to install.

To help offset the capital costs of installing chargers, one official told us that agencies can assess and design larger charging station sites with multiple ports to lower the average costs for installing each port. However, agency officials also described how increasing the scale of installations often requires that the agency do more planning and make expensive infrastructure improvements, including the installation of new, and often expensive, equipment to carry electricity to the site.

Regarding the cost of charging equipment, automakers we interviewed had differing predictions about how these costs may change over time. For example, one automaker stated that capital costs for chargers are likely to increase, since the cost of labor and materials has been increasing. In contrast, another automaker stated that these costs would likely decrease, since charging equipment is getting less expensive.

Fuel Costs

Fuel costs are generally lower for ZEVs compared with gas vehicles, though these costs can be affected by different factors. Average fuel efficiency for ZEVs available in fiscal year 2024 is higher than for gas vehicles and, specifically, ZEVs made available by GSA are at least three to four times more efficient than the national average for gas vehicles based on the Department of Energy's miles per gallon equivalent estimates.[38] For example, one agency official pointed to $450,000 in fuel cost savings over 2 years for the agency from its ZEV fleet of 118 vehicles. As we have previously reported, fuel costs for ZEVs may be

[37]There are three levels of charging – Level 1, Level 2, and DC Fast Charging – that charge at different speeds. For example, Battery Electric Vehicles would require a Level 2, while a Plug-In Hybrid Electric Vehicle could use a Level 1 charger.

[38]This figure is based on GSA's Fiscal Year 2024 Fleet Alternative Fuel Vehicle Guide information on combined fuel efficiency for ZEVs and the Department of Energy's national average miles per gallon equivalent estimates for cars, light trucks, and vans.

impacted by extreme weather, which can decrease the range of the ZEV's battery and the number of miles driven.[39] Also, fuel costs can vary, depending on the cost of electricity. Two automakers we spoke with stated that since costs vary by location, it is difficult to factor in the costs of the electricity for the chargers. In addition, one study we reviewed found that gas vehicles will likely become more fuel efficient over the next decade and, subsequently, result in lower fuel savings when compared with ZEVs.[40]

Maintenance and Repair Costs

We found maintenance costs are generally lower for ZEVs. For example, a study by Argonne National Lab found that maintenance costs of a battery electric vehicle may be up to 40 percent lower than gas vehicles for reasons including battery electric vehicles lacking certain moving vehicle parts that require maintenance.[41] Also, some agency officials stated that these lower maintenance costs for ZEVs may be used to offset the initial acquisition costs of ZEVs. For example, for leased vehicles, agencies often pay lower mileage rates for leased ZEVs than for leased gas vehicles, a rate that includes maintenance and repair costs. ZEV mileage rates for fiscal year 2024 sedans averaged approximately 7 cents per mile, while for gas vehicles, mileage rates averaged 15 cents per mile. However, for agency-owned vehicles, officials from most of the selected agencies we spoke with said they did not have enough information to estimate repair or maintenance costs for these ZEVs. We previously reported that more maintenance information is likely to be available as the use of telematics in the federal fleet becomes more widespread.[42] Also, agency officials noted more maintenance information could be available as the first ZEVs in the federal fleet reach the end of their useful lives.

[39]GAO-19-397.

[40]Chakraborty, Buch, and Tal, "Cost of Plug-in Electric Vehicle Ownership."

[41]U.S. Department of Energy, Argonne National Laboratory, *Comprehensive Total Cost of Ownership Quantification for Vehicles with Different Size Classes and Powertrains*, ANL/ESD-21/4, (April 2021).

[42]GAO, *Federal Vehicle Fleets: GSA Has Opportunities to Further Encourage Cost Savings for Leased Vehicles,* GAO-14-443 (Washington, D.C.: May 7, 2014).

ZEVs Offer Environmental Benefits, While Selected Agency Officials Reported That Gas Vehicles Are More Flexible and Convenient to Manage

Environmental and Equity Benefits of ZEVs

As we have previously reported and as studies we reviewed showed, ZEVs offer environmental benefits in that they produce fewer tailpipe emissions and greenhouse gas emissions than gas vehicles.[43] Officials from eight of the 11 agencies we spoke with described considering environmental impacts when choosing ZEVs, including lowered greenhouse gas emissions. However, as we have previously reported, some agencies do not always include the cost or impact of greenhouse gas emissions when selecting specific vehicles.[44] One agency official told us that they estimated their agency had avoided 260,000 metric tons of greenhouse gas emissions over the previous 2 years by replacing gas vehicles with ZEVs for their fleet. As we have previously reported, the transportation sector is the largest single source of greenhouse gas emissions in the country,[45] even though the federal fleet represents a small percentage of the more than 15 million new cars sold in the U.S. in 2023.

Some officials we interviewed and studies we reviewed also described the opportunity to use the ZEV transition to improve equity for specific groups as a potential benefit of ZEVs. For example, federal agencies describe in their ZEV strategic plans how they generally intend to deploy charging infrastructure in historically disadvantaged communities. According to the Environmental Protection Agency, vehicles that produce lower tailpipe emissions help to minimize direct health impacts on

[43]GAO-19-397.

[44]GAO-19-397. One study we reviewed found that including the costs of these emissions would likely change the results of any vehicle cost calculations. See Pouria Ahmadi, "Environmental Impacts and Behavioral Drivers of Deep Decarbonization for Transportation through Electric Vehicles," *Journal of Cleaner Production*, vol. 225 (2019): 1209-1219, https://doi.org/10.1016/j.jclepro.2019.03.334.

[45]See GAO, *Climate Change: State and Local Efforts to Reduce Greenhouse Gas Emissions from Vehicles*, GAO-23-106022 (Washington, D.C.: Aug. 3, 2023).

different communities, including underserved or historically disadvantaged communities that live near roadways.[46]

Operational Benefits of Gas Vehicles and ZEVs

Officials at the selected agencies and stakeholders we spoke with identified a range of benefits of gas vehicles.

- *Flexibility.* Officials from 10 of 11 agencies cited the flexibility of gas vehicles as a benefit, including the ability to use the vehicles regardless of weather conditions. For example, officials stated they can use gas-powered vehicles in extreme or different weather conditions that ZEVs may not be able to handle (at least to some degree), including very hot weather.
- *Performance.* Officials from 10 of 11 agencies pointed to the convenience of gas vehicles that can operate over long distances without the "range anxiety" that agency officials associated with ZEVs. All officials from the agencies we spoke with stated that because there is less existing infrastructure to support ZEVs, federal employees would need to adapt their behavior to meet the requirements for ZEVs, including the need to potentially find and use charging stations during the daytime, which often requires additional time. However, we previously found that federal employees travel limited miles on a daily basis and that the range of available ZEVs can easily meet this need, especially for light-duty vehicles.[47]
- *Fleet management.* Officials from nine of 11 agencies stated that managing gas vehicles in the fleet is fairly straightforward, including depot refueling at existing locations and well-understood maintenance requirements. These officials were concerned about how agencies will meet ZEV charging requirements, including the increased uncertainty with the new technology.

Most federal officials at selected agencies told us that they did not have enough experience with ZEVs in their fleets to understand the operational benefits of ZEVs. Specifically:

- Officials from six of 11 agencies stated they had no opinion or lacked enough information to judge whether or not ZEVs can better perform agency mission.

[46]U.S. Environmental Protection Agency, *Near Roadway Air Pollution and Health: Frequently Asked Questions,* EPA-420-F-14-044 (Aug. 2014).

[47]GAO, *Federal Vehicle Fleets: Observations on the Transition to Electric Vehicles,* GAO-23-105635 (Washington, D.C.: Oct. 20, 2022).

- Officials from six of 11 agencies stated they had no opinion or basis to judge whether some light-duty ZEVs deliver better performance, such as more rapid acceleration.

Selected Agencies Considered Mission, Costs, and Location and Used Multiple Decision-Making Tools When Choosing Vehicles

Selected Agencies Primarily Consider Mission but also Factor in Estimated Costs and Location in Choosing Vehicles to Acquire

Officials from all 11 selected agencies told us that the vehicle's intended mission is a primary factor they considered in choosing vehicles. Agency officials described a range of missions that their fleet vehicles are used for, including law enforcement, emergency response (such as after a natural disaster), and roadway inspection and maintenance. Table 1 provides information about the selected agencies' fleets, including the number of vehicles and how the agencies use their fleet vehicles to accomplish their missions.

Table 1: Characteristics of Selected Agencies' Fleets, Fiscal Year 2023

Agency	Total number vehicles (estimated)	How agency uses fleet vehicles
Department of Defense		
Defense Logistics Agency	1,099	The Defense Logistics Agency uses its fleet to support missions throughout the world, such as food inspection at food-handling/supplier facilities, quality assurance visits to numerous fuel facilities, law enforcement and emergency services, inter-depot movement of supplies, facility and infrastructure maintenance activities, and motor pool support for temporary duty assignments.
U.S. Army Corps of Engineers	7,141	The U.S. Army Corps of Engineers uses its fleet to support missions throughout the nation, such as engineering, design and construction, and real estate for the Armed Forces; water resources development and management; environmental cleanup and restoration; research and development; and disaster assistance.
Department of Homeland Security	50,104	The Department of Homeland Security uses its fleet vehicles to support its missions of preventing terrorism and enhancing security across the U.S., securing and managing U.S. borders, enforcing immigration laws, safeguarding and securing cyberspace, and ensuring resilience to disasters.

Agency	Total number vehicles (estimated)	How agency uses fleet vehicles
Customs and Border Protection	23,245	Customs and Border Protection uses almost all (91 percent) of its fleet vehicles for law enforcement purposes. For this reason, its vehicles often require "upfitting" with things such as emergency lights, sirens, and canine cages.
Federal Emergency Management Agency	1,128	The Federal Emergency Management Agency uses some fleet vehicles to respond to natural disasters, such as hurricanes.
Immigration and Customs Enforcement	12,500	Immigration and Customs Enforcement uses almost all (99 percent) its fleet vehicles for law enforcement purposes. For this reason, the vehicles require "upfitting" with emergency lights, sirens, high wattage and amperage radio systems, and secure weapons storage solutions.
Department of Transportation	5,954	The Department of Transportation uses some of its fleet vehicles for roadway inspection and maintenance. Such vehicles need to access rugged terrain areas and unpaved roads.
Federal Highway Administration	453	The Federal Highway Administration uses its fleet vehicles to help fulfill its mission of supporting state and local governments in the design, construction, and maintenance of the nation's highway system and various federally and tribal-owned lands.
Tennessee Valley Authority	2,699	The Tennessee Valley Authority uses its fleet of vehicles to help fulfill its broad mission of providing low-cost energy, protecting the environment, and promoting economic development within the Tennessee Valley. The Authority's vehicle assets help support this mission as they: (1) enable the production of reliable, resilient, and low cost energy to the people of the Tennessee Valley; (2) serve as a tool to provide environmental stewardship that protects and preserves its public lands, water, and air in the region; (3) are used to engage and attract economic development opportunities that will serve the region's communities by promoting sustainable progress that supports the Valley's energy transition.
U.S. Department of Agriculture	38,703	The U.S. Department of Agriculture operates its vehicles globally within cities, rural communities, and national forests across the U.S. and uses them to support the department's varied missions, including food safety, nutrition, crop and animal inspections, agricultural and forestry research, fire suppression, resource management, and law enforcement.
Natural Resources Conservation Service	8,812	The Natural Resources Conservation Service operates in both rural and urban environments and uses its fleet vehicles in executing conservation work across private and public ranges, pastures, croplands, wetlands, and woodlands.

Source: GAO analysis of federal fleet report and interviews with selected agencies. | GAO-25-106972

Officials from eight of 11 selected agencies also told us that the intended mission of the vehicle influenced whether the agency chose to purchase the vehicle or lease it from GSA. For example, officials from three agencies noted that their agencies tended to lease vehicles used for "administrative" purposes, such as transporting federal employees. Officials from four agencies said they were more likely to purchase vehicles that need to be customized or "upfit" to meet mission needs.

Officials from all selected agencies said that estimated costs are another primary factor in choosing a vehicle. For example, officials from three agencies noted that the budget for the year when the vehicle is scheduled for replacement has influenced the decision about which vehicle to replace it with. In another example, officials from one agency told us that their staff needed pickup trucks that can tow trailers with, for instance, snowplows and salt spreaders. While there was a ZEV pickup model available in recent years that would meet these mission needs, the officials said that this vehicle's cost was too expensive for their fleet.

Officials from eight of 11 agencies said that, before acquiring a vehicle, they considered several aspects about the vehicle's location, including the availability of chargers and local weather conditions. For example, officials from one agency told us that when deciding whether to choose a ZEV, they tried to identify agency facilities near the vehicle's location that already have charging stations. If there were no agency facilities with charging stations nearby, the officials would reach out to other agencies to see if there are any chargers available for temporary use until new ones can be installed. In another example, officials from several agencies stated that they considered the weather conditions of where the vehicle will be deployed to choose between ZEVs and gas vehicles, since electric vehicle batteries may not function as well in extremely cold or hot weather. For instance, officials from one agency with sites nationwide told us that no ZEVs had been used at their Alaska sites due to the extremely cold weather there in the winter months.

Most Selected Agencies Used Available Decision-Making Tools from Facilitating Agencies and Their Own Tools to Choose Vehicles

Ten of the eleven agencies in our selection had experience with using two or more of the decision-making tools available from the facilitating agencies. These tools were designed to help federal fleet managers in choosing vehicles and submitting their annual ZEV Strategic Plans and include:

- *Zero-Emission Vehicle Planning and Charging (ZPAC) tool.* This Department of Energy (DOE)-maintained tool provides information to help inform agencies' vehicle decisions, such as by identifying the agency's fleet vehicles that have a suitable ZEV replacement and estimating the number of chargers that would be needed to support those vehicles.[48] The ZPAC information is based on data reported into FAST, the government-wide source of data on the federal fleet, from

[48]We reported in 2023 that the ZPAC tool was developed by CEQ, DOE, GSA, and OMB. See GAO-23-105350. DOE maintains and makes updates to the ZPAC tool and updates related guidance on its *ZEV Ready Center* website.

the previous year's FAST submission. As we reported in 2023, federal agencies used the ZPAC tool in 2021, the year Executive Order 14057 was issued, but it has since been optional.[49]

Officials from five selected agencies told us the ZPAC tool was useful as they were making decisions about vehicles to acquire. For example, officials from one agency noted that the ZPAC tool shows which vehicles have a suitable ZEV replacement. Officials from a different agency said the ZPAC tool had been helpful, as it clearly laid out the costs and benefits of various types of vehicles.

Conversely, officials at two agencies told us that the ZPAC tool was not helpful because it was not possible to use the agency's budget as a factor when selecting vehicles. As a result, those two agencies stopped using the ZPAC tool after it was no longer required. According to CEQ officials, the ZPAC is not designed to be used for budgeting purposes.

- *ZEV & Electric Vehicle Supply Equipment (EVSE) Target Setting tool.* CEQ provides this tool to federal agencies as part of the template for submitting annual ZEV Strategic Plans. The tool presents FAST data with other data, such as estimated costs for charging infrastructure and predictions about future ZEV availability to help agencies set their ZEV acquisition targets for the coming years.

  Officials from three of five selected agencies that had used this tool said it was helpful.[50] For example, officials from one agency said that the tool includes a projection for how many of the agency's vehicles will be eligible for replacement in the next few years, thus making it easier to plan for multiple years of vehicle acquisitions. Officials from the other two agencies that had used this tool did not discuss their experience with using it.

- *Electric Vehicle Suitability Assessment (EVSA).* Launched by GSA and its telematics provider, Geotab, in 2023, this tool is based on telematics installed in the agencies' vehicles. According to GSA officials, the EVSA was launched to help federal fleet managers identify the leased vehicles in their agencies' fleets that would be most effective and easiest to replace with ZEVs, based on function and

[49]GAO-23-105350.

[50]We included components of the department level as agencies, for a total of 11 federal agencies in our selection. However, components are not required to submit the annual ZEV Strategic Plans. Only five agencies in our selection had used this tool; the other six selected agencies had not used it.

range requirements. GSA officials told us that, to access this tool, federal agencies must

- have telematics installed on the fleet vehicles to be assessed;
- have at least 3 months of collected telematics data on those vehicles; and
- subscribe to Geotab's ProPlus Service, a GSA telematics plan that offers federal agencies enhanced use of their telematics data and access to the EVSA, among other offered services. In fiscal year 2024, it cost $13 per leased vehicle per month to subscribe to this service. As of October 2024, GSA will provide access to Geotab's ProPlus Service for all leasing customers, at no additional cost. According to GSA officials, they made this change to incentivize more agencies to use this service package, which provides agencies with additional capabilities for monitoring and using the telematics data, including the collection of GPS data, which is necessary for proper EVSA analysis.

Three of the 11 selected agencies had used the EVSA. Officials from two agencies that were not using the tool said that the cost of the GSA subscription telematics service was a deterrent. Officials from two agencies said that they were planning to use this tool in the future once their agencies had equipped more of their fleet vehicles with telematics.

While officials from two of the three agencies who had used the EVSA tool said that it was useful, these officials also said that the tool could be improved. For example, officials from one agency explained that they had chosen not to follow the EVSA's recommendations because following them would have resulted in significant costs to their agency, estimated in the range of $343,000 to about $730,000. Officials from this agency noted that the EVSA tool's recommendations may not be cost-effective for those with small fleets. In response, GSA officials told us that the EVSA is a fairly new tool that is not designed to cover all aspects of fleet management but could serve as one component of an agency's fleet management strategy.

Officials from nine of 11 agencies said they had developed their own internal tool to help choose vehicles, in part because of the limitations of tools available from the facilitating agencies. For example, officials from one agency told us that their agency's tool was more useful than the ZPAC and the ZEV and EVSE target-setting tools because it enabled their fleet managers to use eight different criteria and 50 variables to rank gas vehicles in the fleet to be replaced with ZEVs. Further, they noted

that when they had used the ZPAC tool in the past, it only presented about 600 agency vehicles for replacement, even though there were about 1,000 eligible vehicles at the time. Officials from another agency told us that using their own tool allowed the agency to include factors that are not in the ZPAC tool.

In addition, officials at several agencies said the available decision-making tools were not useful for choosing vehicles used for law enforcement purposes. For example, officials at one agency said that ZPAC data had not included suggested ZEV options for law enforcement or emergency response heavy-duty vehicles. According to an official at another agency, the tools offered by the facilitating agencies were generic and did not match their law enforcement needs. Officials at a third law enforcement agency said that it would be helpful to have a tool or other information that is tailored toward law enforcement vehicles. For instance, they explained that it would be helpful for a tool to show how the available electrical power of ZEVs compared with those of upfit law enforcement vehicles that are gas vehicles. An agency official told us that currently, they have to buy the vehicles first and then field test them to ensure that the ZEVs meet the agency's mission requirements; for example, being compatible with the agency's radio equipment used to communicate during missions. According to GSA officials, the options for law enforcement ZEVs available in the market are limited, which, in turn, limits the ZEV options that the decision-making tools can present.

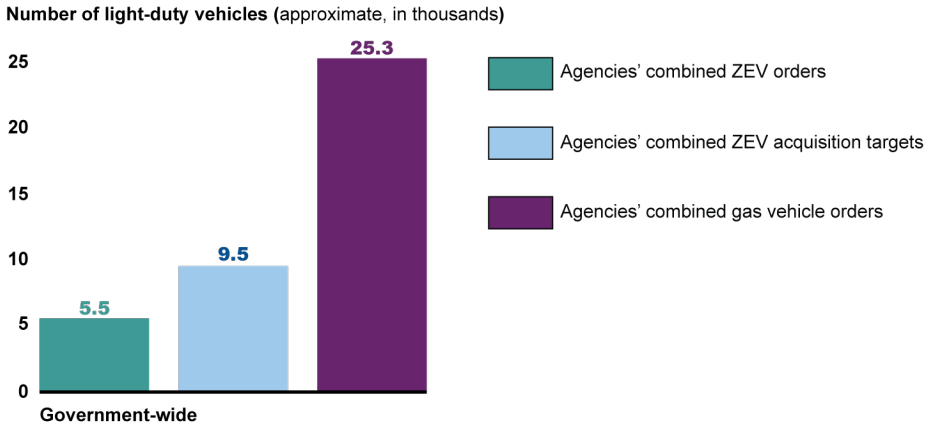
According to CEQ, DOE, and GSA officials, they continue to gather feedback from federal agencies on their decision-making tools and have made some improvements to the tools as a result. For example, DOE officials noted that they had updated the ZPAC tool since its launch in 2021, including improving the prepopulated FAST data to address agencies' concerns that not all their fleet vehicles eligible for replacement were visible in the initial version of this tool. However, as officials from CEQ and GSA noted, the decision-making tools have limitations and would need to be combined with other information for the federal agencies to make their vehicle acquisition decisions.

Agencies Acquired Mostly Gas Vehicles and Reported That Meeting ZEV Goals Will Largely Depend on Availability of Charging Infrastructure and Appropriate ZEVs

Agencies Acquired Mostly Gas Vehicles in 2023

Under Executive Order 14057, all affected agencies' acquisitions of light-duty vehicles are required to be ZEVs by the end of fiscal year 2027. However, in 2023, selected agencies were still mostly acquiring gas vehicles for their fleets. Agencies' self-set targets for fiscal year 2023, when combined, were to acquire (purchase or lease) almost 9,500 light-duty ZEVs through GSA. However, as shown in figure 4, in 2023, agencies only ordered 5,500 light-duty ZEVs through GSA for the federal fleet, missing the combined target by almost 42 percent.

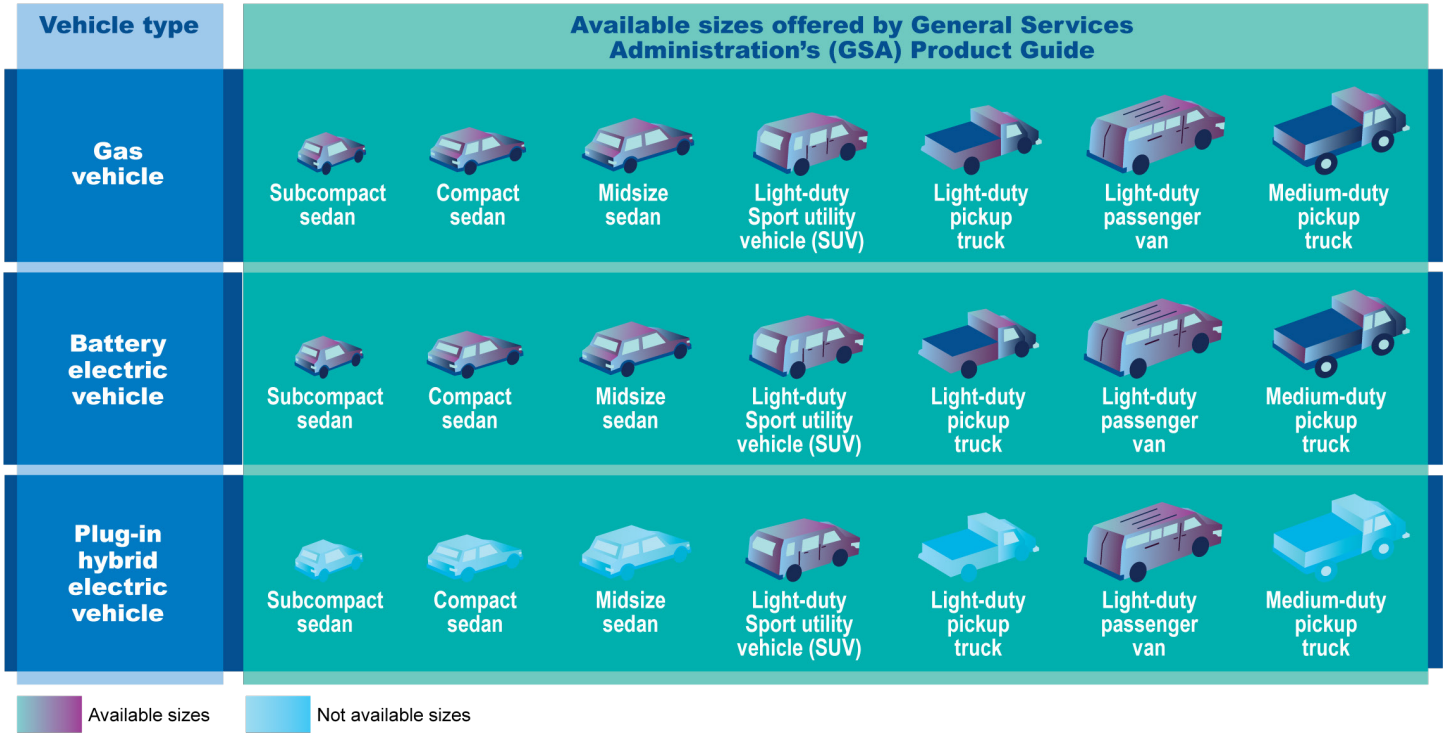
Figure 4: Agencies' Combined Light-Duty Zero Emission Vehicle (ZEV) Orders Compared with Targets and Gas Vehicle Orders, Fiscal Year 2023



Source: GAO analysis of General Services Administration information. | GAO-25-106972

While the federal fleet currently includes some ZEVs, some types of vehicles are not available as a ZEV. As of March 2024, GSA did not offer very many medium-duty ZEV models and had limited availability of plug-in hybrid versions of light-duty and medium-duty vehicles (see fig. 5).

Figure 5. Different Types of Vehicles Available from GSA, as of March 2024



Source: GAO illustration and analysis of General Services Administration information. | GAO-25-106972

Meeting ZEV Goals Will Reportedly Depend on Availability of Charging Infrastructure and ZEVs

According to officials from nine of 11 selected agencies, reaching Executive Order 14057's 2027 and 2035 ZEV acquisition goals will largely depend on factors outside of the facilitating agencies' control. These factors include the rate that the needed charging infrastructure is installed and deployed and whether sufficient ZEVs are available for the federal fleet.

- Officials from six agencies told us that factors related to charging infrastructure will influence whether they can reach the ZEV goals, including the amount of funding available for charging infrastructure and the pace at which charging infrastructure is installed nationwide.

Some agency officials told us that they would need additional funding for purchasing ZEVs and the charging infrastructure to meet the executive order's ZEV goals for 2027 and 2035. Further, while federal agencies have initiated some projects to install chargers since 2022, much work remains for federal agencies to install the necessary charging ports needed to fuel a federal fleet made up of mostly ZEVs. As we reported in 2022, GSA has estimated that the federal government may need over 100,000 charging ports to transition the federal fleet to ZEVs.[51] As of November 2024, about 10,500 charging ports had been activated nationwide by federal agencies, while installation of about 52,500 charging ports was in process, according to CEQ officials.

- Officials from seven agencies said that reaching the ZEV acquisition goals would heavily depend on several factors, especially the availability of ZEVs. For example, officials from one agency said that they are planning on meeting the 2027 and 2035 goals but only if there are enough light-, medium-, and heavy-duty ZEVs available that meet mission needs, including law enforcement vehicles. Officials from two other agencies told us that, to reach the goals, they would need more ZEV model options. This would require automakers to produce more ZEVs, especially medium- and heavy-duty vehicles, and to increase the numbers of ZEVs offered to GSA for the federal fleet.
- Officials from three agencies told us that if they are to meet the ZEV goals of Executive Order 14057, then automakers will have to deliver the vehicles that agencies order. Officials from five agencies told us that they have ordered ZEVs in the past, including in fiscal years 2021 and 2022, only to have the order canceled by the automaker, either because there were not enough ZEVs available or for other reasons. Officials from three agencies told us that they believe that the auto shortages of 2021 and 2022 have abated, at least to some extent. We reported in July 2022 that the semiconductor shortages that started during the COVID-19 lockdown periods in 2020 continued to impact all industries, especially the auto industry.[52] The four selected automakers said they were hopeful that their respective capacity to

[51]GAO-23-105635.

[52]See *Semiconductor Supply Chain: Policy Considerations from Selected Experts for Reducing Risks and Mitigating Shortages,* GAO-22-105923 (Washington, D.C. July 2022). We reported that the global semiconductor shortage that began in 2020 continued to affect a range of U.S. industries into the summer of 2022, such as the auto industry. For example, an auto industry stakeholder linked the semiconductors shortage to 3 million fewer cars produced in North America in 2021 than had been expected.

produce ZEVs has been increasing; thus vehicle cancellations may be less of an issue in the future. According to GSA officials, annual vehicle cancellations have decreased since 2022 and did not affect agencies' acquisitions in fiscal year 2023 or fiscal year 2024.

Difficulty Installing Chargers in Leased Property and Limited Electrical Capacity May Also Affect Agencies' Progress toward Goals

According to some agency officials, the following additional challenges continue to influence the transition to ZEVs:

- *Complexities related to using ZEVs on leased properties.* Officials from two agencies stated that using ZEVs on leased properties can be complex. For example, officials at one agency said that when the vehicle's location is at a leased facility, the agency will need to work with the lessor when planning to install the charging infrastructure to obtain approval for the installation, which can be complicated. Officials at another selected agency told us that when they are considering installing charging infrastructure, they estimate that there will be additional costs in a leased facility than in an owned facility. Similarly, in July 2023, we reported that federal agencies had expressed concerns about using ZEVs at sites that are leased, including sites leased through GSA.[53] For example, one agency selected 22 sites to begin deploying charging equipment, in part because these sites were at buildings owned (and not leased) either by the agency or GSA.
- *Electrical capacity limitations.* Officials from two agencies told us that electrical capacity limitations in older federal facilities could complicate the process of installing chargers. For example, officials from one agency told us that their facilities average 55 years old and may need electrical upgrades to accommodate charging infrastructure, which increases the agency's installation costs. They noted that such older facilities were not designed to accommodate modern technology and, thus, require electrical upgrades before charging infrastructure can be used. They stated that the need to make upgrades, such as adding electrical service capacity, dramatically increases the installation costs and time frames. For instance, at one of the agency's older facilities, the agency had to buy a new electrical transformer to run the planned charging infrastructure, which added not only costs but one year to the installation time frame.

  Similarly, we reported in July 2023 that 10 of 26 federal agencies had cited these electrical capacity limitations as a challenge that could hinder their goals for installing charging infrastructure for ZEVs.[54]

[53]GAO-23-105350.

[54]GAO-23-105350.

These agencies reported concerns that it could become more difficult to supply the minimum electrical current necessary for larger numbers of Level 2 or DC Fast Charging ports. GSA officials said that many of their buildings have varying degrees of electrical capacity and that some buildings may not have the additional electrical capacity needed to support the installation of charging equipment. If a facility is found to have an undersized existing power supply, a utility company may have to install and expand the necessary electrical infrastructure.

Facilitating Agencies Have Collaboration and Other Efforts Aimed at Supporting Federal Agencies' Progress toward ZEV Goals

We found that the facilitating agencies (CEQ, DOE, and GSA) have a variety of efforts aimed at helping federal agencies make progress toward the ZEV goals. In particular, the three agencies have efforts designed to help facilitate collaboration among federal agencies and with each other. In addition, the three agencies have other efforts, including collecting data from federal agencies and using the data to improve their facilitation efforts to better meet federal agencies' needs.

The Facilitating Agencies Have Various Efforts to Foster Collaboration and Learning among Federal Agencies

We found that the facilitating agencies have efforts designed to help foster collaboration and learning among federal agencies. According to key practices for performance management, involving stakeholders can help federal agencies determine priorities and target resources and to align their goals and strategies with those of others involved in achieving the same outcomes.[55] The facilitating agencies have numerous efforts to work with federal agencies, including organizing multiple active working groups and providing training and technical assistance to agencies. For example, CEQ and OMB review agencies' ZEV Strategic Plans and help agencies to develop plans to achieve their targets. DOE has resources to support federal fleet managers through the process of electrifying their fleet, and GSA developed a streamlined process for purchasing charging infrastructure. The facilitating agencies had multiple efforts underway to collaborate with other federal agencies on ZEV-related issues, including providing technical assistance and training. Some of these efforts are summarized in table 2.

[55]GAO-23-105460.

Table 2: Selected Collaborative Efforts by the Council on Environmental Quality (CEQ), Department of Energy (DOE), and General Services Administration (GSA) to Support Transition to Zero Emission Vehicles (ZEV)

Key effort	Responsible facilitating agency	Intended outcomes, according to agency officials
ZEV Fleet Strategic Plans	CEQ and Office of Management and Budget (OMB)	• After reviewing these plans, CEQ and OMB, where appropriate, will meet with agency staff to identify successful practices, challenges, and needs for technical support and to assist agencies in developing detailed, robust plans to achieve their targets, among other purposes.
ZEV Ready Center	DOE	• Through its website, DOE aims to communicate with federal agencies on how they could pursue ZEV efforts.
FedFleet Conference	GSA	• An annual training conference designed to provide federal fleet managers with information on fleet electrification and other topics.
Electric Vehicle Supply Equipment (EVSE) Accelerator	CEQ, DOE, GSA	• CEQ, DOE, and GSA studied agencies' efforts to install charging infrastructure and ways to improve the process.
Working groups	CEQ, DOE, GSA	• Through regular occurring working groups, such as the Federal Electric Vehicle Agency Roundtable, the facilitating agencies share information with other agencies.

Source: GAO analysis of CEQ, DOE, and GSA information. | GAO-25-106972

The facilitating agencies also have efforts to collaborate with each other on ZEV-related issues, according to agency officials. According to key practices for interagency collaboration, the practice of bridging organizational culture—such as by establishing procedures for working together— can enhance the results of collaborative efforts.[56] Agency officials stated that the three agencies have procedures aimed at maintaining frequent communication. For example, officials told us that they hold biweekly meetings in which DOE and GSA share information, discuss the status of projects and brainstorm ways to help agencies, for example, through technical assistance, training, and strategic planning.

The Facilitating Agencies Are Collecting Data and Feedback in an Effort to Improve Their Assistance to Federal Agencies

We found that the facilitating agencies are collecting data on agencies' efforts to reach ZEV goals and have efforts aimed at using feedback from federal agencies to improve their facilitation efforts. According to key performance management practices, federal agencies should build or collect the evidence they need to understand and to assess the progress and outcomes of high-priority government efforts, such as the federal fleet's transition to ZEVs.[57] All the facilitating agencies have some efforts

[56]GAO-23-105520.

[57]GAO-23-105460.

related to collecting data from federal agencies and using these data to assess and improve their facilitation efforts.

- **CEQ.** CEQ collects data and assesses the data through its annual ZEV Strategic Plan process, according to agency officials. As part of this process, officials said CEQ collects and reviews agencies' ZEV Strategic Plans, FAST data, and quarterly charging infrastructure data that DOE collects and provides, and GSA's acquisition situation reports.[58] CEQ officials explained that they use these reviews to assess federal agencies' progress toward the ZEV transition. For example, these officials said that they annually revisit agencies' own interim targets with agencies based on the latest vehicle availability data and charging needs, using the ZEV Strategic Plans. In addition, CEQ officials told us that after they collect data through the annual strategic planning process, they then provide agencies with feedback, including on their ZEV acquisition targets. Further, according to officials, CEQ leverages the stakeholder feedback by discussing agencies' targets during the strategic planning process to inform decisions related to the ZEV transition.

  CEQ also uses data gathered through its annual ZEV Strategic Plan process to assess and improve its facilitation efforts. For instance, within the ZEV Strategic Plans, there is a section for agencies to request additional support from CEQ, DOE, and GSA to assist with challenges the agencies are experiencing related to the ZEV transition. CEQ officials explained that they take this information and identify what areas need to be improved including providing additional tailored training or support. These officials told us that they have been working with GSA on a gap analysis of training resources to identify if there are any gaps to be filled.

- **DOE.** DOE builds evidence by collecting data and stakeholder feedback as part of its technical assistance efforts. According to DOE officials, they have processes for using these data to update DOE's ZEV Ready Center and other tools to better address agencies' needs, according to agency officials. DOE officials said the agency collects federal agencies' annual FAST data submissions and quarterly charging infrastructure installation data, which DOE then submits to

[58]According to our review, GSA's situation reports include monthly acquisition data and information on principal agencies' acquisition progress, such as agency acquisition targets and ZEV orders.

CEQ.[59] In addition to the FAST data reviews, DOE has conducted other assessments of data related to the ZEV transition. For instance, DOE officials told us that they are beginning to assess more granular data, such as telematics data, about charging energy consumption metrics. DOE has also developed a way to assess telematics information about trip-level data to determine where future ZEVs in the federal fleet will require charging infrastructure, according to agency officials. DOE officials told us that if agencies collected this trip-level data more formally, this could help agencies meet their ZEV targets more quickly by allowing these agencies to better plan ahead.

DOE officials also worked with CEQ and GSA on the EVSE Accelerator initiative, an initiative that identified key challenges that selected agencies face related to ZEVs, such as with installing charging infrastructure. Based on the results of this initiative, DOE identified lessons learned and created an action plan to help address some of the challenges that agencies reported. The action plan included steps such as updating the ZEV Ready Center website and expanding training in some areas. In addition, according to agency officials, DOE made changes to the ZPAC tool in response to agencies' feedback. Specifically, DOE officials said the ZPAC tool for fiscal year 2024 allows for multiyear ZEV acquisition planning because DOE received feedback from agencies that this tool would be more useful if it allowed for such multiyear planning.

- **GSA.** GSA builds evidence by collecting data and stakeholder feedback as part of its technical assistance efforts and has improved some of its efforts based on feedback from federal agencies. For example, GSA collects acquisition data to assess progress made by federal agencies, as well as telematics data to help facilitate government-wide progress toward the ZEV transition and to improve the quality of vehicle data tracked, according to GSA officials. GSA also collects agency feedback and has used that feedback to make enhancements to its federal fleet system. More recently, according to agency officials, GSA has collected feedback through focus groups with agencies and other groups, such as to see whether these agencies need more tools.

  GSA has also used stakeholder feedback to assess the usefulness of the agency's overall technical assistance efforts and to inform its

[59]As part of its review, DOE officials told us that they have a FAST support team to check annual FAST data submissions for quality and to identify potential concerns about the quality of fleet data submissions.

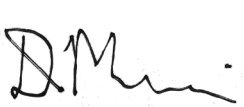
decisions, according to agency officials. Specifically, GSA officials told us that GSA has held multiple customer focus groups and forums to solicit customer feedback and improve GSA's technical assistance efforts. As a result of those focus groups, GSA has prioritized training agencies on vehicle electrification and updates information on ZEVs and specific vehicles annually.

Agency Comments

We provided a draft of this report to CEQ, DOE and GSA for review and comment. In addition, we provided a draft of this report for review and comment to the selected fleet-managing agencies in our review: the Department of Defense, Department of Homeland Security, Department of Transportation, Tennessee Valley Authority, and the U.S. Department of Agriculture. We received technical comments from CEQ, the Department of Homeland Security, and Tennessee Valley Authority that we incorporated as appropriate. Officials from DOE, GSA, and the Departments of Defense and Transportation stated that their agencies had no comments. We did not receive any comments from the U.S. Department of Agriculture.

We are sending copies of this report to the appropriate congressional committees; the Chair of CEQ; the Administrator of GSA; the Secretaries of Agriculture, Defense, Energy, Homeland Security, and Transportation; the Chief Executive Officer of the Tennessee Valley Authority; and other interested parties. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-2834 or marronid@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 II.



David Marroni
Director, Physical Infrastructure Issues

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Ranking Member
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House of Representatives

Appendix I: Objectives, Scope, and Methodology

The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 included a provision for GAO to submit a report on how the costs and benefits of operating and maintaining electric vehicles in the federal fleet compare with those of operating and maintaining gas vehicles.[1] This report describes (1) how the primary costs and expected benefits of Zero Emission Vehicles (ZEV) compare with those for gas vehicles in the federal fleet; (2) how selected agencies are determining which ZEV and gas vehicle to acquire; (3) the types of vehicles that federal agencies acquired and the factors that selected agencies reported will influence whether they can meet the ZEV acquisition goals; and (4) the efforts by the Council on Environmental Quality (CEQ), the General Services Administration (GSA), and the Department of Energy (DOE) to facilitate agencies' progress toward the ZEV acquisition goals.

To inform each of these objectives, we reviewed relevant laws, regulations, and agency documents. We also reviewed Executive Order 14057 and the accompanying *Federal Sustainability Plan: Catalyzing America's Clean Energy Industries and Jobs*. We conducted interviews with officials from CEQ, DOE, and GSA (which we refer to as the facilitating agencies) about their efforts to help agencies affected by Executive Order 14057 meet its requirements, as well as with a nongeneralizable selection of external stakeholders and federal agency officials with knowledge about these efforts. We selected these stakeholders based on our review of past GAO reports and current literature. These stakeholders included the American Association of State Highway and Transportation Officials, Alliance for Automotive Innovation, and National Association of State Energy Officials. We also interviewed fleet operators familiar with deploying electric vehicles, including city officials from Seattle and New York, as well as representatives from car rental companies Enterprise and Hertz. In addition, we interviewed representatives from four automakers that produce electric and gas vehicles and supply these vehicles to the federal fleet: Stellantis, Ford, General Motors, and Hyundai.

We also used information and interviewed officials from a nongeneralizable sample of four federal agencies and seven components that manage vehicle fleets. We used GSA data to select a mix of agencies with different fleet characteristics.[2] The characteristics we used

[1]Pub. L. No. 117-263, § 7234, 136 Stat. 2395, 3677 (2022).

[2]For the purposes of this report, we use the term agency to include executive branch agencies and components within agencies.

to select agencies included (1) the size of the agency's fleet, (2) whether the agency had used GSA's Electric Vehicle Suitability Assessment (EVSA) tool for selecting vehicles for electrification, (3) whether the agency's vehicle fleet is primarily owned or leased by the agency, and (4) whether the agency has military or law enforcement missions to ensure we captured these specific views. Collectively, we refer to these as 11 selected agencies (shown in table 3) throughout the report.

Table 3: Federal Agencies Included in Our Scope

Agencies we interviewed	Components we interviewed
Department of Defense[a]	Defense Logistics Agency
	U.S. Army Corps of Engineers
Department of Transportation	Federal Highway Administration
Department of Homeland Security	Customs and Border Protection
	Federal Emergency Management Agency
	Immigration and Customs Enforcement
U.S. Department of Agriculture	National Resources Conservation Service
Tennessee Valley Authority	N/A

Source: GAO summary of interviewed federal agencies. | GAO-25-106972

[a]While we met with Department of Defense officials, we presented the information from the two component agencies, since they make decisions to purchase or lease vehicles for their fleets.

To describe how the primary costs and expected benefits of ZEVs compare with those for gas vehicles in the federal fleet, we analyzed data regarding the amount agencies pay when leasing and purchasing vehicles from GSA. We also performed a literature search for material published between January 2018 and January 2024 on the costs of ownership for ZEVs and gas vehicles, in databases such as Scopus, ProQuest, EBSCO, and Dialog. Three analysts reviewed the search results to identify the most relevant articles. We selected peer-reviewed articles to reference in the report that we determined to be of sound methodology and applicable content. For the analysis of agency costs to lease vehicles from GSA, we used documents outlining the vehicles available for lease and associated costs. To identify vehicles available to agencies, we used GSA's Vehicle Availability List and the Fiscal Year 2024 GSA Fleet Alternative Fuel Vehicle Guide, both published in March 2024. For leasing costs, we used GSA's Fiscal Year 2024 Rate Bulletin for Customers for gas vehicles and the Fiscal Year 2024 GSA Fleet Alternative Fuel Vehicle Guide for ZEV-related costs. To estimate the mileage rate costs for leased vehicles, we calculated the average annual

vehicle miles traveled for both light-duty trucks and passenger vehicles, using the Fiscal Year 2023 Federal Fleet Report. We included only agency-leased vehicles from GSA and excluded U.S. Postal Service vehicles, as those vehicles were outside the scope of this review. To assess the reliability of the data, we reviewed GSA documentation and interviewed GSA officials responsible for using the data as part of its Federal Fleet Report. We found the data sufficiently reliable for our purposes. For the cost of purchased vehicles, we used the listing price for agencies from GSA-provided data.

In addition, in our interviews with the selected 11 agencies, we asked officials about the costs and benefits of both ZEVs and gas vehicles. Information from these interviews is not generalizable to all federal agency officials but was used to inform our understanding of the experiences of different agencies as part of the ZEV transition. We asked closed-ended questions about the extent to which agencies have enough information to estimate costs to repair and maintain electric vehicles, as well as the ease of use of both electric and gas vehicles, among other topics.

To identify how selected agencies are determining which ZEV and gas vehicles to acquire, in our interviews with selected agencies, we asked officials about the factors they consider in choosing vehicles, such as the vehicle's intended mission and estimated costs. We also asked officials about the decision-making tools they use when selecting vehicles, including the GSA-provided EVSA, DOE's Zero-Emission Vehicle Planning and Charging (ZPAC) tool, and the ZEV and Electric Vehicle Supply Equipment (EVSE) tool that CEQ includes with its annual ZEV Fleet Strategic Plan instructions. For example, we asked if agency officials had used the EVSA and ZPAC tools in the past to select which vehicles to acquire and, if so, whether they found the tools useful. We also asked selected agencies about other tools used to make these decisions, such as internally developed tools.

To determine the vehicles that agencies have acquired and factors that will influence whether federal agencies can meet the ZEV acquisition goals, in our interviews with selected agencies, we included questions about the agency's intended use of vehicles and the number and types of ZEVs available that might match these needs. We also asked about other considerations that might influence whether agencies could meet their ZEV targets, such as the results of the agency's past efforts, if any, to acquire ZEVs and the availability of funding to purchase vehicles and the necessary charging infrastructure. After completing our interviews with

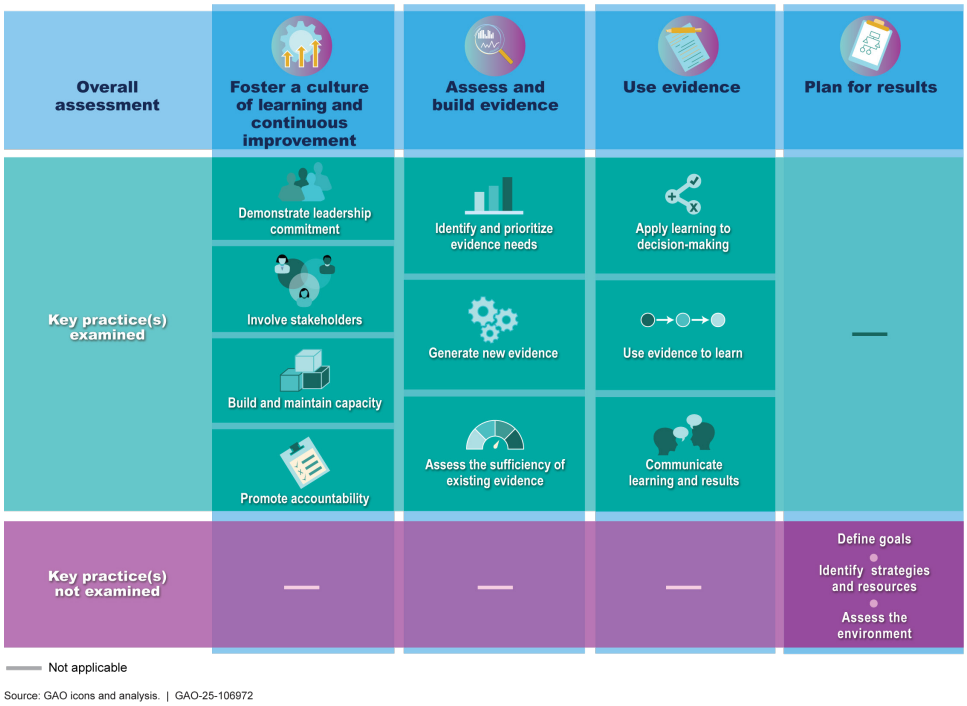
the selected federal agencies, we analyzed the information to identify the factors that the agencies most frequently cited as having the potential to influence whether agencies could meet the acquisition goals.

To identify the key efforts by CEQ, DOE, and GSA to promote the federal government's progress toward ZEV acquisition goals established under Executive Order 14057, we reviewed agency documents and data and conducted interviews. For example, in interviews with the facilitating agencies, we asked officials about the intended outcomes of these efforts and how the three agencies coordinate their activities related to them. We also gathered vehicle data, including the number of vehicles in each agency's fleet, from GSA's Fiscal Year 2024 Federal Fleet Report. We then asked individual agencies to review and verify these data and about how each agency uses these vehicles. We also used monthly vehicle ordering data from GSA to identify the number of ZEVs that agencies ordered in fiscal year 2023 and the associated ZEV targets.

To assess CEQ, DOE, and GSA's efforts to facilitate agencies' progress toward their ZEV acquisition targets, we compared the identified efforts with 10 practices from *Evidence-Based Policymaking: Practices to Help Manage and Assess the Results of Federal Efforts*.[3] We refer to these as performance management practices, since they can be used by federal agencies to manage high-priority federal efforts, such as the effort to transition the federal fleet to ZEVs. Of the total 13 practices, we used 10 that we deemed relevant for this assessment, which fall into three areas, as shown in figure 6 below. We determined that three practices—which relate to planning for results—should not be used to assess the facilitating agencies' efforts, since these do not align with the three agencies' ZEV-related efforts.

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

Figure 6: Key Practices for Performance Management Used to Assess Agencies' Efforts



We also used a selection of the key interagency collaboration practices outlined in *Government Performance Management: Leading Practices to Enhance Interagency Collaboration and Address Crosscutting Challenges*.[4] Of the eight interagency collaboration practices, we determined four to be applicable to this review and used them to assess the three facilitating agencies' ZEV-related efforts:

1) Bridging organizational culture

2) Sustaining leadership

3) Including relevant participants, and

[4]GAO, *Government Performance Management: Leading Practices to Enhance Interagency Collaboration and Address Crosscutting Challenges,* GAO-23-105520 (Washington, D.C.: May 24, 2023).

4) Leveraging resources and information.

We conducted this performance audit from July 2023 to December 2024 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.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

David Marroni (202) 512-2834 or marronid@gao.gov

Staff Acknowledgments

In addition to the individual named above, John W. Shumann (Assistant Director), Jessica Bryant-Bertail (Analyst-in-Charge), Melanie Diemel, Terence Lam, Mary-Catherine P. Overcash, Amy Rosewarne, Todd Schartung, Ben Theuma, Alicia Wilson, and Elizabeth Wood made key contributions to this report.