

Next Generation Delivery Vehicles – Environmental Impact Statement

AUDIT REPORT

Report Number 22-107-R23 | April 6, 2023



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Highlights

Background

The U.S. Postal Service is replacing its aging mail delivery vehicle fleet with Next Generation Delivery Vehicles (NGDVs). The National Environmental Policy Act of 1969 (NEPA) requires agencies to prepare an Environmental Impact Statement (EIS) when evaluating major federal acquisitions that could significantly affect the environment – such as that for NGDVs. The Postal Service completed the EIS process in February 2022.

What We Did

In response to a congressional request, our objectives were to 1) determine if the Postal Service's NGDV acquisition process and the related EIS complied with NEPA and 2) assess the reliability and reasonableness of the EIS and supporting analysis. As part of our audit work, we engaged a contractor to assist with evaluating the EIS's underlying assumptions, data, models (including those for total cost of ownership and environmental emissions), and conclusions.

What We Found

We found the Postal Service's NGDV acquisition process and EIS followed NEPA's procedural requirements. This process and the EIS, however, prompted stakeholder concerns and are the source of ongoing litigation. The Postal Service subsequently said they would complete a supplemental EIS (SEIS), estimated for completion in August 2023, to reflect the ongoing implementation of its delivery network improvement plan.

While NEPA procedural requirements were generally followed, we found concerns with portions of the EIS that should be addressed in the SEIS. First, the original EIS only included an evaluation of three alternatives – alternatives that ultimately were not feasible or did not meet the Postal Service's purpose or need for the proposed action. Second, some total cost of ownership cost input methodologies should be updated to reflect current prices or regional delivery operational variances. Third, some of the environmental analysis assumptions should be updated to more fully reflect NGDV emissions. Addressing these concerns would improve the reliability and reasonableness of the SEIS and its supporting analysis for decision makers and stakeholders.

Recommendations

We recommended management, as it develops its SEIS, include an evaluation of more alternatives that are technically and economically feasible and meet the purpose and need for the proposed action; update the total cost of ownership analysis, such as incorporating more current and/or regionally based data; and update the environmental analysis assumptions to more fully reflect NGDV emissions.

Transmittal Letter



OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

April 6, 2023

MEMORANDUM FOR: JUDITH A. DE TOROK
VICE PRESIDENT, CORPORATE AFFAIRS

MARK A. GUILFOIL
VICE PRESIDENT, SUPPLY MANAGEMENT

A handwritten signature in black ink, reading "Amanda H. Stafford", is centered below the recipient names.

FROM: Amanda H. Stafford
Deputy Assistant Inspector General
for Retail, Marketing, & Supply Management

SUBJECT: Audit Report – Next Generation Delivery Vehicles – Environmental
Impact Statement (Report Number 22-107-R23)

This report presents the results of our audit of U.S. Postal Service's Next Generation Delivery Vehicles – Environmental Impact Statement.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Joshua Bartzen, Director, Retail, or me at 703-248-2100.

Attachment

cc: Postmaster General
Corporate Audit Response Management
Chief Retail and Delivery Officer & Executive Vice President

Results

Introduction/Objective

This report responds to a March 14, 2022, congressional request from U.S. Representatives Carolyn Maloney, Gerald Connolly, Stephen Lynch, Brenda Lawrence, and Jared Huffman to review the U.S. Postal Service’s Next Generation Delivery Vehicles – Environmental Impact Statement (Project Number 22-107). Our objectives were to 1) determine if the Postal Service’s Next Generation Delivery Vehicles (NGDVs) acquisition process and the related Environmental Impact Statement (EIS) complied with the National Environmental Policy Act of 1969 (NEPA) and 2) assess the reliability and reasonableness of the EIS and supporting analysis. See [Appendix A](#) for additional information about this audit.

As part of our audit work, the U.S. Postal Service Office of Inspector General (OIG) engaged a contractor to assist with evaluating the EIS’s underlying assumptions, data, models (including those for total cost of ownership (TCO)¹ and environmental emissions), and conclusions.

Background

The Postal Service has begun a multi-year planning and acquisition process to replace its aging mail delivery vehicle fleet with NGDVs – a purpose-built, right-hand-drive (RHD) vehicle for mail and package delivery (see Figure 1). The fleet replacement is part of the Postal Service’s 10-year plan, *Delivering for America: Our Vision and Ten-Year Plan to Achieve Financial Sustainability and Service Excellence*, developed to transform the Postal Service’s financial performance and customer service over the next decade through significant investments in people, technology, and infrastructure. The Postal Service launched its multi-billion-dollar delivery vehicle modernization effort by awarding an initial \$482 million contract in February 2021 to finalize the production design of the NGDV.

Figure 1. NGDV



Source: U.S. Postal Service.

NEPA² requires agencies³ to prepare an EIS when evaluating major federal acquisitions that could significantly affect the environment – such as that for NGDVs. The EIS describes the proposed action, any reasonable alternatives that were identified, and the environmental impacts associated with the actions. The EIS process includes various actions including the public posting of the proposed action, draft and final EISs, and the Record of Decision.⁴

EIS Process

The Postal Service began the EIS process in March 2021 and published a draft EIS in August 2021. The draft EIS described the evaluation of the environmental impacts of the proposed action – to purchase and deploy NGDVs consisting of up to 90 percent internal combustion engine (ICE) vehicles and at least 10 percent battery electric vehicles (BEV) – along with three alternatives. The U.S. Environmental Protection Agency (EPA) raised concerns about the draft EIS in October 2021, stating it was inadequate

1 The TCO model helps businesses make better-informed decisions by calculating the total cost associated with a product, including the acquisition, use, maintenance, support, and disposal.

2 The premise of NEPA is that complete consideration of the relevant environmental factors could have an impact on the responsible agency’s ultimate decision. *ONDA v. Rose*, 845 Fed. Appx. 700 (Mem) (9th Cir. 2021). While NEPA imposes procedural requirements on federal agencies undertaking review, it does not mandate outcomes. *ONDA v. Jewell*, 840 F.3d 562, 568 (9th Cir. 2016). As such, agencies are granted substantive discretion during the NEPA process. See *Calvert Cliffs’ Coordinated Committee v. Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971), cert. denied, 404 U.S. 942 (1972).

3 While the Postal Service is an independent agency of the federal government, 39 C.F.R. § 775.2 (a) requires them to administer applicable policies set forth in the NEPA.

4 Federal regulations provide that environmental impact statements “shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses.” 40 C.F.R. § 1502.1. [Appendix B](#) contains more detailed information on the NEPA EIS process.

and precluded meaningful consideration of alternatives. The Postal Service went forward and published the final EIS in December 2021.

The EPA, White House Council on Environmental Quality (CEQ),⁵ congressional members, and other stakeholders expressed concerns about the final EIS. For example, EPA officials raised issues in February 2022 about the final EIS, stating it failed to consider more environmentally protective, feasible alternatives and underestimated greenhouse gas emissions. The EPA requested the Postal Service prepare a supplemental EIS (SEIS) and hold a public hearing. In late February 2022, the Postal Service issued the final decision to purchase and deploy 50,000 to 165,000 purpose-built RHD vehicles, consisting of a mix of ICE and battery electric powertrains, with at least 10 percent BEVs. The Postal Service placed its first order for 50,000 vehicles, including 10,019 BEVs (20 percent of the initial order) in March 2022.

Additional external stakeholder interest in the EIS and NGDV process surfaced the following month. A congressional hearing⁶ in early April examined the benefits, opportunities, and challenges of electrifying the Postal Service fleet and the NGDV process. Three lawsuits⁷ were filed in Federal District Court in late April 2022 challenging the Postal Service's final EIS and Record of Decision.

SEIS Process

In June 2022, the Postal Service announced that it would prepare an SEIS⁸ to reflect the substantial delivery network changes outlined in its 10-year plan. An SEIS is required to follow the same processes as that for an EIS (e.g., notice, draft, public comments, final, Record of Decision, etc.). The following month, the Postal Service adjusted the scope of the SEIS and the NGDV purchase to *“further reflect network refinements, route optimization, and financial*

“The Postal Service announced that it would prepare an SEIS to reflect the substantial delivery network changes outlined in its 10-year plan.”

improvements that will support a shortened delivery vehicle procurement strategy interval.”

In August 2022, the Inflation Reduction Act of 2022 was enacted which included \$3 billion in funding for the Postal Service to purchase zero-emission delivery vehicles and install related infrastructure.⁹ The Postal Service then announced in December 2022 plans to further accelerate the electrification of its delivery fleet by acquiring at least 66,000 BEVs through 2028.

The decision to prepare an SEIS requires the Postal Service to follow NEPA procedural requirements and include further evaluations of this acquisition process and related environmental impacts.¹⁰ The SEIS is expected to be completed by August 2023. [Table 1](#) summarizes key events of the Postal Service's NGDV acquisition process and EIS.

The Postal Service's development of an SEIS and their recent announcement of their intention to acquire at least 66,000 BEVs over the next six years shows an increased emphasis on protecting the environment by further electrifying its delivery fleet. As the Postal Service develops the new SEIS, synthesizing lessons learned from the original EIS submission process can help the Postal Service effectively enhance the technical, operational, and environmental analyses associated with their strategy to replace its aging delivery vehicle fleet.

5 The CEQ is the federal organization that oversees NEPA implementation.

6 *It's Electric: Developing the Postal Service Fleet of the Future*, Committee on Oversight and Reform, House of Representatives, April 5, 2022.

7 The OIG takes no position on the merits of these lawsuits.

8 An SEIS must be issued if 1) substantial changes are made in the proposed action that are relevant to environmental concerns or 2) significant new circumstances or information bearing on environmental impacts of the proposed action arise or are discovered.

9 The Inflation Reduction Act of 2022, Pub. L. No: 117-169 (Aug. 16, 2022) provides the Postal Service \$3 billion in funding (available through fiscal year 2031).

10 Pursuant to 39 CFR 775.11(f)(2), the decision on a proposed action involving an EIS must be delayed until any necessary supplement (i.e., an SEIS) has been circulated and has gone through the commenting period. An SEIS is prepared, circulated, and filed in the same manner (except for determining scope) as draft and final statements, unless alternative procedures are approved by the CEQ.

Table 1. Summary of Key Events of the Postal Service’s NGDV Acquisition Process and EIS

Date	Event
February 2021	Postal Service awarded contract to the Supplier
March 2021	Postal Service initiated EIS process with Notice of Intent
April 2021	Public scoping and comment period ended
June 2021	Postal Service received feedback from EPA on a draft EIS outline ¹¹
August 2021	Postal Service published draft EIS
October 2021	EPA provided feedback on draft EIS
December 2021	Postal Service submitted final EIS
February 2022	EPA provided feedback on final EIS
February 2022	Postal Service issued Record of Decision
March 2022	Congress asked OIG to review Postal Service’s final EIS and corresponding Record of Decision
March 2022	Postal Service placed first NGDV order
April 2022	House hearing on NGDV acquisition
April 2022	Three lawsuits were filed in Federal District Court challenging the NGDV final EIS and Record of Decision
June 2022	Postal Service announced it will prepare an SEIS
July 2022	Postal Service adjusted scope of SEIS and NGDV purchase
August 2022	Inflation Reduction Act of 2022 was enacted, which included \$3 billion in funding for the Postal Service to purchase zero-emission delivery vehicles and install related infrastructure
December 2022	Postal Service announced plans to accelerate the electrification of its delivery fleet by acquiring at least 66,000 BEVs by the end of 2028
August 2023 (est.)	Planned SEIS completion

Sources: OIG analysis of publicly available information and discussions with Postal Service officials.

Finding #1: NGDV Acquisition Process and EIS Analysis

The Postal Service’s NGDV acquisition process and EIS followed NEPA procedural requirements. We have concerns, however, related to the evaluation of reasonable alternatives, TCO cost inputs, and environmental emissions that the Postal Service should address as it prepares its SEIS.

NEPA Procedural Requirements Analysis

We found the Postal Service’s NGDV acquisition process and EIS followed NEPA’s procedural requirements.¹² The CEQ requires agencies to

create their own implementation procedures that supplement the minimum federal requirements based on each agency’s specific mission and activities.¹³ The Postal Service’s NEPA procedures are found in Title 39, Part 775 of the Code of Federal Regulations, and outline that a Postal Service EIS should be prepared in two stages: draft and final.¹⁴

NEPA regulations also provide the suggested content and format for the EIS: (1) cover; (2) summary; (3) table of contents; (4) purpose of and need for action; (5) alternatives including the proposed action; (6) affected environment and environmental

¹¹ Postal Service officials stated they provided a detailed EIS outline, including proposed alternatives, to EPA for its feedback and recommendations.

¹² In one of the foundational cases for NEPA, the Supreme Court found that: (1) The general *substantive* policy in Section 101 of NEPA is flexible. “It leaves room for a responsible exercise of discretion and may not require particular substantive results in particular problematic instances,” and (2) the procedural provisions in NEPA Section 102 are not as flexible and indeed are designed to see that all federal agencies do in fact exercise the substantive discretion given them. See *Calvert Cliffs’ Coordinated Committee v. Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971), *cert. denied*, 404 U.S. 942 (1972).

¹³ See 40 C.F.R. § 1507.3(c). See also Agency NEPA Implementing Procedures, available at [NEPA | National Environmental Policy Act - Agency NEPA Implementing Procedures \(doe.gov\)](#) (revised January 27, 2023).

¹⁴ See 39 C.F.R. § 775.11(b)(1).

consequences; (7) submitted alternatives, information, and analyses; (8) list of preparers; and (9) appendices (if any).¹⁵ The content and format of the Postal Service’s EIS essentially mirrored the CEQ’s suggested format and included the nine respective sections in the final EIS, and therefore followed the minimal NEPA requirements.

We also determined the Postal Service followed NEPA procedural requirements when they approved a contract with a Supplier in February 2021 (prior to submitting its draft EIS). NEPA does not expressly prohibit agencies from making pre-award decisions so long as no irrevocable steps are taken that would have an adverse impact on the environment or limit its choice of reasonable alternatives.¹⁶ The Supplier contract explicitly stated it was contingent upon the satisfactory completion of the NEPA process.

“We identified portions of the Postal Service’s EIS – such as the evaluation of reasonable alternatives, TCO cost inputs, and environmental emissions analyses assumptions – that should be addressed in the SEIS.”

While NEPA procedural requirements were generally followed, we identified portions of the Postal Service’s EIS – such as the evaluation of reasonable alternatives, TCO cost inputs, and environmental emissions analyses assumptions – that should be addressed in the SEIS.

EIS Analysis – Reasonable Alternatives

The Postal Service’s EIS contained three acquisition alternatives, including associated justifications for why they could not meet the purpose and need of their acquisition, as follows:


1. *Alternative 1.1 – 100 percent RHD commercial-off-the-shelf (COTS) ICE vehicles.* While these vehicles would have some of the modern safety and customized operational features available in the NGDV, the interior layout doors and window

arrangements are not optimized or ergonomically designed for Postal Service operations nor for delivery to curb-line mailboxes.

2. *Alternative 1.2 – 100 percent left-hand-drive (LHD) COTS BEVs.* These vehicles would not support curb-line deliveries and may have route length and other operational and safety constraints that are not suitable on certain delivery routes. Constraints include environmental conditions (e.g., weather), facility limitations (e.g., leased facilities, parking), a lack of available infrastructure, and delivery routes where route length make electric vehicles infeasible or impractical.
3. *No Action Alternative – no purchase of new delivery vehicles.*¹⁷ The current aged and end-of-life delivery vehicles with outdated safety features and poor performance characteristics would not be replaced, leaving the Postal Service unable to fulfill its primary mission to deliver the nation’s mail. This option would also have resulted in the highest potential environmental impacts of all the alternatives.

This analysis was narrow as it did not include other alternatives that were also technically and economically feasible and realistically met the purpose and need for the proposed action.¹⁸ For example, it did not include a mix of either RHD or LHD COTS vehicles or ICE and BEVs.

We also identified additional concerns about the sufficiency and timing of these alternatives. The Postal Service’s position was that it sufficiently evaluated alternatives and was not aware these would be infeasible until the end of the EIS process.

 Postal Service management also stated the purpose of the EIS process was for agency decision makers to evaluate reasonable alternatives that were technically and economically feasible even if those decision makers

¹⁵ See 40 C.F.R. § 1502.10(a).

¹⁶ See 39 C.F.R. § 775.9(a)(6).

¹⁷ A “No Action Alternative” is required according to 40 C.F.R. § 1502.14(c).

¹⁸ We reviewed numerous decisions involving NEPA claims in federal courts, starting with historical cases dating back to the mid-1970s and ending with substantive case law as recent as 2021. We did not find a case where a federal agency completed the NEPA process and submitted a final EIS without a single reasonable alternative to the chosen action.

might have initial doubts or preferences regarding the alternatives under consideration.

The ongoing development of the SEIS and the infusion of federal funding provides an opportunity for the Postal Service to strengthen its evaluation of reasonable alternatives. This evaluation should include additional alternatives, such as evaluating a mix of RHD or LHD COTS and/or ICE and BEVs, that could be technically and economically feasible and meet their purpose and need. A larger variety of alternatives would create a robust analysis that could also help mitigate stakeholder concerns and improve the Postal Service's decision-making analysis during future vehicle acquisitions.

Recommendation # 1

We recommend the **Vice President, Corporate Affairs**, in coordination with the **Vice President, Supply Management**, include an evaluation of more alternatives in the Supplemental Environmental Impact Statement that are technically and economically feasible and meet the purpose and need for the proposed action.

EIS Analysis - Total Cost of Ownership

The Postal Service's TCO analysis relied on a variety of cost inputs, such as gasoline and electricity prices and usage, and included associated methodologies for analyzing fluctuating historical data and developing assumptions for future estimates. While we found aspects of the TCO that were reliable and reasonable, we found concerns related to the reliability of TCO cost inputs that were used in the EIS the Postal Service should address as it prepares the SEIS.

We determined the Postal Service's 20-year¹⁹ TCO model²⁰ included reasonable cost elements and assumptions as follows:

- **Cost Elements.** The Postal Service reasonably accounted for some key cost elements when estimating the TCO of ICE vehicles and BEVs. The Postal Service also compared lifetime costs using a real discount rate and incorporated reasonable maintenance cost estimates and U.S. Energy Information Administration (EIA) cost projection data.

- **BEV Cost Assumptions.** The Postal Service's BEV prices were consistent when compared against other commercial BEVs with similar weight and body style. Specifically, the price of a 2-wheel drive BEV was [REDACTED] and a 4-wheel drive was higher at [REDACTED], which fall between the average [REDACTED] and maximum [REDACTED] prices of comparable commercially available electric cargo vans. Although BEV prices were higher than some of the other commercial vehicles, this could be attributed to NGDVs being purpose-built vehicles.

However, we found concerns with the reliability of other TCO cost inputs used in the EIS. First, the TCO analysis in the December 2021 final EIS used a baseline average nationwide gasoline price of \$2.19/gallon from October 12, 2020, and electricity price of \$0.1089/kilowatt hour (kWh) from July 2020. This approach used data from more than a year prior to the analysis. The Postal Service used the October 2020 price as a baseline for its cost projections,²¹ stating that price was helpful to inform the public of the TCO calculations used by management at the time it determined which supplier in the competitive NGDV procurement offered the best value.

After issuing the final EIS, the Postal Service conducted a sensitivity analysis using baseline average fiscal

year 2021 nationwide prices of \$2.71/gallon for gasoline and \$0.1107/kWh for electricity. The Postal Service stated that this analysis (which used more current, year-long data) resulted in the following changes to the TCO estimates: ICE vehicle costs increased by \$197.9 million and BEVs by \$2.3 million. Postal Service officials stated these results did not materially affect the overall investment cost differentials as BEV costs still greatly exceeded those compared to ICE vehicles. However, the officials noted

that this analysis influenced their Record of Decision and subsequent vehicle order, even though it was not completed in time for inclusion in the final EIS.

We acknowledge the more current, year-long baseline gasoline and electricity prices may not have materially impacted the overall cost differential. However, considering the potential future volatility

“We found concerns related to the reliability of TCO cost inputs that were used in the EIS.”

¹⁹ The Postal Service stated that NGDVs are designed to provide an effective minimum service life of 20 years.

²⁰ This model included a wide range of cost factors, including gasoline, utility, acquisition battery replacement, maintenance, site survey design, charging infrastructure installation, and labor training.

²¹ The Postal Service projected future gas price increases based on EIA forecast indices.

of these prices, efforts to include more current, long-standing baseline data where applicable would help strengthen the overall TCO analysis and stakeholder confidence in the SEIS.

Second, the Postal Service's TCO analysis relied on national averages²² across multiple data inputs that did not account for regional delivery operational variances such as daily vehicle mileage, air conditioning (AC) usage, and gas and electricity fuel prices.²³ The Postal Service used national averages in their analysis to reflect the overall fleet-wide, per-vehicle average costs in the following:

- **Daily Vehicle Mileage.** The Postal Service's TCO assumed an average daily vehicle mileage of 17.3 miles.²⁴ They stated they used this national average for ease of understanding and to align the optimal vehicle/powertrain with each route. While we recognize the reasoning for using this national average, we believe that using actual route mileage would help provide more accurate analysis, particularly considering the expected mileage differences for the different powertrains. For example, it is reasonable to expect that BEVs deployed on longer Postal Service routes (up to the 70-mile range BEV limitation) would generate more fuel cost savings compared to an ICE vehicle, and the opposite for shorter routes.
- **Air Conditioning Usage.** The Postal Service's TCO assumed a national average AC use of 60 percent on and 40 percent off in its fuel efficiency calculations for ICE vehicles. Postal Service officials stated this weighting system was based on industry studies of vehicle AC use. We believe that using a more regional/geographical-based weighting system would provide a more accurate fuel efficiency for the analysis considering the expected differences in AC usage in colder and warmer regions (i.e., AC use in ICE vehicles may be significantly higher on routes in warmer climates). Further, BEV energy usage may be significantly higher on routes in both warmer and colder climates as the battery is engaged to run the AC or heater.

- **Gasoline and Electricity Fuel Prices.** The Postal Service's TCO relied on national averages for gasoline and electricity fuel prices. The Postal Service deemed this approach was reasonable as it incorporated national fuel prices into its national fleet-level analysis. While we recognize the consistency of this approach, we believe it does not sufficiently reflect the array of differences in operating conditions and prices that exist throughout the country. The impact of this fuel price variability on the TCO would depend on the geographic deployment of the NGDVs (if they would be deployed in locations with higher or lower fuel prices).

For example, if the Postal Service deployed the 75,000 ICE vehicles primarily in higher gas price locations like California — where gas prices are historically highest in the nation — rather than in locations with lower gas prices, the actual gas costs incurred could exceed the national cost estimates in the TCO. Further, it is common practice for electric utilities to offer rate structures besides flat dollar per kilowatt hour (\$/kWh) fees such as time-of-use rates, which often offer lower prices during off-peak hours (e.g., overnight hours) when the BEVs are assumed to be charging. We also analyzed recent gas and electricity fuel prices and found vast regional price differences. For example, the 2021 annual gasoline price in California (\$4.01 per gallon) was 51 percent higher than Texas (\$2.65 per gallon). Similarly, the 2021 electricity price in California (\$0.1965/kWh) was 115 percent higher than Texas (\$0.0914/kWh).

The ongoing development of the SEIS provides an opportunity for the Postal Service to address these concerns and strengthen the timeliness and reliability of the key cost inputs in its TCO. This could include evaluating gasoline and electricity baseline prices, vehicle mileage, AC usage, and related methodologies. For example, incorporating more current and/or regional data should result in more reliable TCO analysis.

²² Postal Service officials stated these national averages reflected the nationwide fleet and that this analysis included data from over 200,000 individual routes.

²³ The TCO used an NGDV order quantity of 75,000 vehicles, not the proposed action's potential maximum of 165,000, as the Postal Service determined that 75,000 was a more realistic initial vehicle quantity.

²⁴ The 17.3-mile average is based on the average length of more than 200,000 Postal Service delivery vehicle routes. However, for emissions and fuel consumption calculations in the EIS, the Postal Service used an average delivery length of 21.05 miles, based on the 165,000 Long Life Vehicles, Flex Fuel Vehicles, and COTS proposed for replacement.

Recommendation # 2

We recommend the **Vice President, Corporate Affairs**, in coordination with the **Vice President, Supply Management**, update the total cost of ownership analysis in the Supplemental Environmental Impact Statement, such as incorporating more current and/or regionally based data.

EIS Analysis – Environmental Emissions

The Postal Service’s environmental analysis relied on a variety of complex emissions-related assumptions, which included determining which variables to include (and exclude) and what corresponding data to use. We found the Postal Service correctly recognized the relative and notable environmental benefits of BEVs compared to ICE vehicles and used EPA-endorsed models to support parts of its environmental analyses. For example, BEVs were shown to have fewer greenhouse gas emissions than ICE vehicles.

“We identified some additional concerns related to the precision of some of the assumptions used in the EIS’s environmental emissions analysis.”

We, however, identified some additional concerns related to the precision of some of the assumptions used in the EIS’s environmental emissions analysis the Postal Service should address as it prepares its SEIS, as follows:

- *Assumption 1: Applied a single-county emissions on national scale.* The Postal Service analysis applied Westchester County, New York, emissions assumptions on a national scale. The Postal Service asserted that choosing a different location than Westchester County, which was also used in the Postal Service’s 2017 Programmatic Environmental Assessment, would not result in noticeable changes in the emission factors. This choice was also based on prior tests the Postal Service conducted using other counties as comparisons in the 2017 assessment, which

indicated that emissions in Westchester County were representative nationwide.

While we recognize the consistency of this approach, its limited nature does not sufficiently account for regional variation in key emissions inputs such as fuel formulations,²⁵ drive cycles,²⁶ and AC usage.²⁷ As a result, it is likely the ICE vehicle emissions were underestimated in the EIS and could result in inaccurate emissions for a nationwide analysis.

- *Assumption 2: Omitted starting and refueling emissions.* The Postal Service excluded starting and refueling emissions from its analysis, stating they focused on the on-road driving mode and did not include off-road start exhaust and refueling emissions because including these types of assumptions would be negligible, burdensome, and based on speculative data. As starting and refueling are key vehicle operations, excluding this information likely underestimated ICE vehicle emissions of non-carbon dioxide pollutants in the EIS.
- *Assumption 3: Used emissions profile that included lower weight vehicles.* The Postal Service modeled emissions using a default vehicle category (light commercial truck) that included a broader range of vehicle weights and efficiencies than the NGDV. Specifically, the emissions model input included a mix of both light duty passenger trucks and light-heavy duty trucks. The Postal Service chose to categorize the NGDV using the light commercial truck model class based on the NGDV’s weight and engine size, rather than a Regulatory Class based on weight. The Postal Service stated they selected the light commercial truck category based on the NGDV’s engine size (2 liter; 4 cylinders) and weight (8,501 pounds at the time of the final EIS, which was within the 6,000 and 10,000 pound range for EPA’s Model Class 32). They did not, however, specify a Regulatory Class within the light commercial truck category, which could have narrowed the weight range of vehicles to light-heavy duty trucks weighing between 8,501 and 10,000 pounds (EPA’s Regulatory Class 40).

25 The exact formulation of gasoline, such as a mixture of 90 percent gasoline and 10 percent ethanol, can vary. Although carbon dioxide tailpipe emissions per mile for ethanol is similar to using gasoline without it, ethanol results in slightly lower vehicle fuel economy since more fuel is needed in order to travel the same distance.

26 A drive cycle is a series of vehicle speed patterns developed to simulate real world driving conditions, reflecting idling and acceleration. Increased acceleration and idling both result in increased emission. These driving cycles are used for estimating vehicle on-road energy consumption, vehicle emissions, and traffic impact.

27 AC systems contribute to the emissions of greenhouse gases through leakage of hydrofluorocarbon refrigerants into the atmosphere and through the consumption of fuel to provide mechanical power to the AC system.

Light duty passenger trucks are subject to more stringent fuel economy and emissions standards than vehicles like the NGDV, which have a Gross Vehicle Weight Rating of greater than 8,500 pounds. As the NGDV is exclusively a light-heavy duty truck, we believe the Postal Service's approach underestimated ICE vehicle emissions in the EIS.

- **Assumption 4: Did not account for future emissions reductions and used outdated electricity generation mix data.** The Postal Service's Emissions & Generation Resource Integrated Database (eGRID)²⁸ model did not account for future emissions reductions from power sectors since eGRID was originally developed based on available power sector data at that time (2019). The eGRID emissions data were based on an out-of-date electricity generation mix that produced higher emissions than the current and future generation mix would. The Postal Service stated this model followed EPA's recommendation and used the most current publicly available data.

In October 2021, EPA reversed its earlier recommendation made during the April 2021 scoping period and stated the eGRID model was not appropriate for this analysis. We agree with the EPA's recommended reversal since there were other sources available that may have been more appropriate and current for estimating future emissions reductions from power sectors, such as EIA's forecast data and Department of Energy's Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) model.²⁹ Consequently, we believe the Postal Service's model overestimated BEV upstream emissions from power generation.

- **Assumption 5: Did not model power sector emissions of carbon monoxide, particulate matter (PM), or volatile organic compounds (VOC).** Postal Service modeling of upstream power sector emissions for BEVs did not account for select criteria pollutants, specifically carbon

monoxide and PM, or VOCs. The Postal Service stated its use of the eGRID model was responsive to associated EPA recommendations and that upstream emissions for VOCs and other select criteria pollutants³⁰ were not typically considered in EIS analyses.

We determined, however, that at least one of the models used by the Postal Service for other analyses (i.e., GREET) can also account for some of the select criteria pollutants not provided in eGRID. It is a typical practice to consider these criteria pollutants and VOCs in an EIS and that both downstream and upstream emissions should be included for completeness. For example, other agencies' EISs³¹ incorporate criteria pollutants, VOCs, and hazardous air pollutants.³² Excluding certain pollutants when modeling power sector emissions would result in underestimated BEV emissions.

- **Assumption 6: Did not include grid electrical losses.** The Postal Service recognized grid electrical loss estimate data in the EIS documents and noted other potential negative impacts, but the data was excluded from the emissions model. The EIA estimates that annual electricity transmission and distribution losses (electricity losses that occur between the point of generation and delivery to the customer) averaged about five percent of the electricity transmitted and distributed in the United States from 2017 to 2021. Specifically, by not including the grid electrical loss data in the emissions model, the Postal Service may have underestimated BEV upstream emissions.

The ongoing development of the SEIS provides an opportunity for the Postal Service to address these concerns and revisit and strengthen the original assumptions to increase the fidelity of its environmental emissions analysis. Revising these assumptions to further align with NGDV emissions would generate more reliable and precise environmental analysis, as well as help ensure decision makers and stakeholders understand the full

²⁸ eGRID is a comprehensive source of data from EPA on the environmental characteristics of almost all electric power generated in the US. The data includes emissions, emission rates, and many other attributes.

²⁹ The GREET model is an analytical tool that simulates the energy use and emissions output of various vehicle and fuel combinations. Unlike eGRID data, EIA data account for the future power grid mix and the GREET model would represent a more realistic projection of the future electric grid than using a static assumption. EIA forecasts coal use for U.S. electricity to drop 29 percent from 2019 levels by 2030; 42 percent by 2040; and 46 percent by 2050.

³⁰ This includes carbon monoxide, PM10, PM2.5, nitrogen oxides, and sulfur dioxide.

³¹ See National Highway Traffic Safety Administration, Final Supplemental Environmental Impact Statement, Corporate Average Fuel Economy Standards - Model Years 2024-2026, March 2022; and Final Environmental Impact Statement, Corporate Average Fuel Economy Standards Passenger Cars and Light Trucks - Model Years 2017-2025, July 2012.

³² According to the EPA, hazardous air pollutants are known to cause cancer and other serious health impacts.

environmental impacts associated with these vehicle evaluations and decisions.

Recommendation # 3

We recommend the **Vice President, Corporate Affairs**, in coordination with the **Vice President, Supply Management**, update the environmental analysis assumptions in the Supplemental Environmental Impact Statement to more fully reflect Next Generation Delivery Vehicle emissions.

Looking Forward

The Postal Service is continuing efforts to further increase the electrification of its delivery fleet. The Postal Service announced plans in December 2022 to acquire at least 66,000 BEVs over the next six years. The Postal Service also continues to seek input from the public, organizations, and federal, state, and regional agencies to identify environmental concerns and potential alternatives to be addressed in the SEIS.

The Postal Service will continue to be challenged in evaluating the NGDV acquisition's impact on the quality of the environment as it balances this acquisition with its delivery network improvement plans and recent federal funding. This task will remain particularly complicated due to the nature of this multi-faceted analysis, such as determining which variables to include (e.g., starting and refueling emissions), corresponding historical data timeframes and sources (e.g., gas and electricity fuel price points), and methodologies for projecting future results (e.g., future emissions reductions). Evaluating and implementing these enhancements would strengthen the reliability and reasonableness of the SEIS – both in terms of decision-making and stakeholder perception and confidence.

Management's Comments

Management generally agreed with the findings and recommendations but disagreed with specific elements of some findings and added additional clarification. Regarding the reasonable alternative finding, management disagreed with the OIG position that the Postal Service's analysis was narrow, stating the alternatives were reasonable, deeply considered, developed in consultation with the EPA (particularly the addition of the LHD COTS BEVs alternative), responsive to public comments, and fully compliant with NEPA.

Regarding the TCO finding, management agreed with the concerns about using national averages for gasoline and electricity fuel prices. Management noted, however, that including regional data in the TCO model would not have significantly altered or enhanced the Postal Service's consideration of alternatives in the SEIS and that the model was not developed to support optimal deployment of vehicles, but rather to support procurement decisions through the comparison of vendor pricing. Management then stated they are refining the TCO model to use national-level forecasts as a baseline with state-level multipliers for the routes in each state.

Regarding the environmental emissions finding, management disagreed the EIS would have benefited from greater precision, as it would have risked making the EIS less accessible to the public. Management stated that starting and refueling emissions would be a negligible fraction of the vehicle's total emissions and would have required the Postal Service to employ numerous assumptions regarding the distribution of vehicles at the time of refueling and the weather. Management also maintained it would risk significantly overestimating the NGDV's emissions to represent NGDV as a light heavy-duty truck, and therefore intends to use the comparable light commercial truck category to represent the NGDV in the SEIS. Management concluded by stating the possibility of future power grid emission reductions was thoroughly considered in the EIS.

Regarding recommendation 1, management stated that the alternatives under consideration for the SEIS are technically and economically feasible and meet the purpose and need for the proposed action. They also stated the preferred alternative currently being considered will "include a mix of either RHD or LHD COTS vehicles or ICE and BEVs." The target implementation date is December 31, 2023.

Regarding recommendation 2, management stated that the TCO analysis in the EIS was designed to support procurement decisions through the comparison of vendors in a competitive solicitation (and not the optimal deployment of ICE or BEVs) and that this analysis was legally sufficient and appropriate. Management added that the TCO analysis in the SEIS will incorporate the most current data at the time of preparation and will apply state-level adjustments for fuel and electricity prices against a national baseline to better refine the cost estimates. The target implementation date is December 31, 2023.

Regarding recommendation 3, management stated that the environmental analyses, including underlying assumptions, will be updated in the SEIS. Management stated they intend to include reasonable estimates for starting and refueling emissions, upstream criteria pollutant emissions, and electrical grid losses. Management also stated that future emissions reductions from expected greening of the U.S. power grid will be accounted for through use of the Department of Energy's GREET model (as opposed to the EPA's eGRID model that was used in the EIS). The target implementation date is December 31, 2023.

See [Appendix C](#) for management's comments in their entirety.

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendations and the corrective actions should resolve the issues identified in the report.

Regarding management's disagreement with elements of the reasonable alternative finding, we acknowledge the Postal Service added the 100 percent LHD COTS BEVs alternative in response to EPA and other public commenters. However, as we reported, the analysis of the three alternatives in the EIS did not include other alternatives that were also technically and economically feasible and realistically met the purpose and need for the proposed action. The Postal Service's proposed corrective actions for recommendation 1 would address the concerns we raised about the narrow nature of this analysis and the related sufficiency and timing of these alternatives.

Regarding management's clarification that the use of current, regional based data in the TCO during the EIS would not have significantly altered or enhanced their consideration of alternatives, as we reported, incorporating more current or more regional data would enhance the reliability of the TCO analysis. The Postal Service's proposed corrective actions for recommendation 2 – to use the most current data at the time of preparation and incorporate state-level adjustments – would address our concerns.

Regarding management's disagreement with various elements of the environmental emissions finding, we acknowledge the challenge in determining what level of analysis and/or precision is reasonable. However, we continue to support the related analysis and conclusions we reported for starting and refueling emissions, vehicle weight, and future emissions reductions. Management's corrective actions for recommendation 3 would address many of our concerns.

All recommendations require OIG concurrence before closure. The OIG requests written confirmation when corrective actions are completed. All recommendations should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation the recommendations can be closed.

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Appendix A: Additional Information

Scope and Methodology

Our objectives were to 1) determine if the Postal Service's NGDV acquisition process and the related EIS complied with NEPA and 2) assess the reliability and reasonableness of the EIS and supporting analysis. To accomplish our objectives, we consulted with OIG's Office of General Counsel in assessing the following:

- Applicable laws, policies, procedures, and guidance regarding NEPA, including those for EISs and SEISs.
- Processes used to develop and submit the Postal Service's EIS for the NGDV acquisition and whether the EIS followed NEPA's procedural requirements.
- NGDV acquisition contract to determine if the funding commitment made prior to the EIS followed NEPA's procedural requirements.

We also engaged a contractor³³ with subject matter expertise to evaluate the reasonableness, accuracy, and sufficiency of the EIS and related TCO and environmental emissions analyses. They provided specific insights into the following:

- TCO analysis assumptions in the EIS and whether alternative assumptions were available that would have improved its analysis.
- BEV cost estimates and whether the cost assumptions in the EIS were substantially higher than other electric delivery vehicles sold to private companies.
- Environmental emissions analysis assumptions in its EIS and the potential impact of the assumptions on estimating emissions for ICE vehicles and BEVs.

We provided guidance to the contractor and reviewed their work to accomplish our objectives. We also:

- Reviewed documents included in the NGDV acquisition process and EIS, including related public comments and postings.

- Interviewed Postal Service Headquarters management and reviewed related supporting materials and analysis, including its 10-year plan.
- Reviewed NEPA-related information from sources including the EPA, CEQ, and other stakeholders.

We conducted this performance audit from March 2022 through April 2023 in accordance with generally accepted government auditing standards and included such tests of internal controls as we considered necessary under the circumstances. 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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We discussed our observations and conclusions with management on March 13, 2023, and included their comments where appropriate.

We did not assess the reliability of any computer-generated data for the purposes of this report.

Prior Audit Coverage

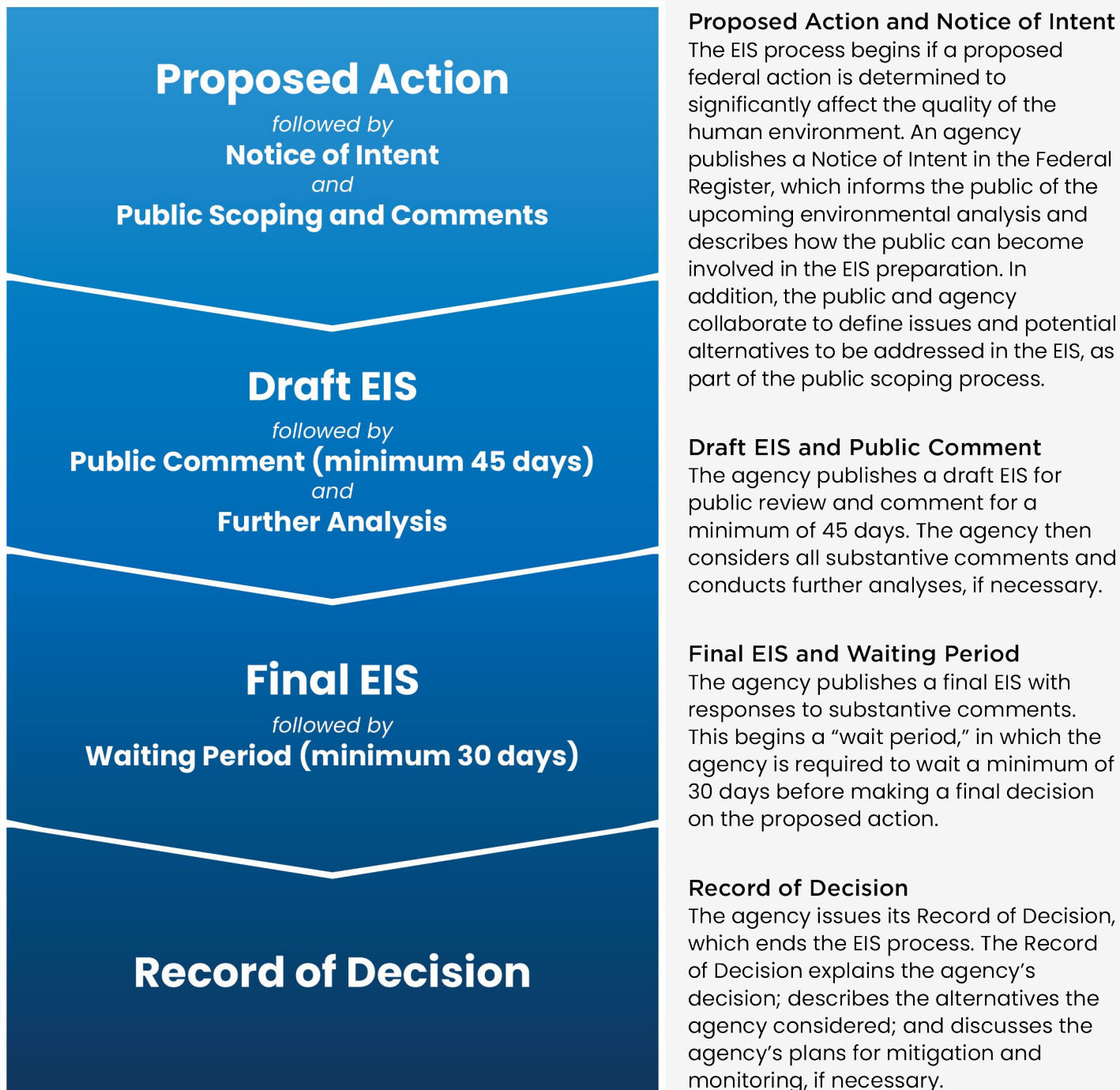
The OIG did not identify any prior audits or reviews directly related to the objective of this audit within the last five years.

³³ The contractor provides advisory and analytical services to U.S. federal agencies, state and local governments, and commercial clients related to the energy, environment, and infrastructure market.

Appendix B: NEPA EIS Process

Figure 2 summarizes the NEPA EIS process.

Figure 2. NEPA EIS Process³⁴



Source: OIG analysis of EPA’s website on the NEPA EIS process.

³⁴ An SEIS may be required when there are new circumstances or information relevant to the proposed action or its environmental impacts. If an agency decides to supplement its EIS, it then prepares, publishes, and files the SEIS in the same fashion as a draft or final EIS.

Appendix C: Management's Comments



March 30, 2023

JOHN CIHOTA
DIRECTOR, AUDIT SERVICES

SUBJECT: Next Generation Delivery Vehicles – Environmental Impact Statement (Project Number 22-107-DRAFT)

Thank you for providing the Postal Service an opportunity to review and comment on the findings and recommendations contained in the draft audit report, *Next Generation Delivery Vehicles – Environmental Impact Statement*.

Management generally agrees with the findings and recommendations of the audit, which concludes the following:

1. The Postal Service's Next Generation Delivery Vehicle (NGDV) acquisition process and Environmental Impact Statement (EIS) followed the procedural requirements for the National Environmental Policy Act (NEPA), though there were concerns about the breadth of reasonable alternatives considered;
2. The Postal Service's 20-year Total Cost of Ownership (TCO) model included reasonable cost elements and battery electric vehicle (BEV) cost assumptions, though there were concerns about the reliability of other TCO inputs such as the price of gasoline used and the Postal Service's "reliance on national averages across multiple data inputs that did not account for regional delivery operational variances"; and
3. The Postal Service correctly recognized the relative and notable environmental benefits of BEVs compared to internal combustion engine (ICE) vehicles and used Environmental Protection Agency (EPA) endorsed models to support parts of its environmental analyses, though there were concerns related to the precision of the assumptions used.

While management agrees with the recommendations contained in the report, it is important to note and point out specific elements of the OIG's underlying findings which require clarification or where management holds a different view.

Reasonable Alternatives

Concerning the OIG's finding that the EIS analysis was "narrow as it did not include other alternatives that were also technically and economically feasible and realistically met the purpose and need for the proposed action," management disagrees. In addition to designing a Preferred Alternative with the flexibility to alter the mix of ICE and BEV NGDVs to adapt to the Postal Service's changing financial and operational circumstances, the Postal Service considered two other alternatives with the legally required "No Action" alternative, Alternative 1.1 (100% right-hand drive (RHD) commercial off-the-shelf (COTS) ICE vehicles) and Alternative 1.2 (100% left-hand drive (LHD) COTS BEVs).

The LHD COTS BEV alternative was added at the express request of EPA after the Postal Service requested feedback and suggestions on its draft alternatives. This alternative was also responsive to a large number of public comments requesting that the Postal Service consider purchasing a fully electric fleet. Accordingly, while the OIG's finding that the alternatives "did not include a mix of either RHD or LHD COTS vehicles or ICE and BEVs" is a suggestion in hindsight, management maintains that the EIS's alternatives were reasonable, deeply considered, developed in consultation with EPA, responsive to public comments, and fully compliant with NEPA.

Total Cost of Ownership

Concerning the OIG's finding that the Postal Service's use of national averages for gasoline and electricity fuel prices would not "sufficiently reflect the array of differences in operating conditions and prices that exist throughout the country," management agrees with this assessment but notes that the current TCO model presented in the EIS has been refined since the FEIS and uses national-level forecasts as a baseline with state level multipliers for the routes in each state. For example, if State A's gasoline prices are Y% lower or higher than the national baseline, the TCO would reflect that for the proportion of routes in that state.

Management views that the current refinement to the TCO model is in accord with your recommendations, and notes that the Postal Service's sensitivity analysis considered multiple variations in cost and determined that these cost differences did not materially impact the TCO differentials between vehicle options. Thus, the inclusion of regional price data would not have significantly altered or enhanced the Postal Service's consideration of alternatives in the Final EIS.

Finally, with respect to your observation regarding the potential for vehicles to be deployed to locations with higher or lower fuel prices, management notes that the TCO model, as referenced in the EIS, was not developed to support optimal deployment of vehicles but rather to support procurement decisions through the comparison of vendor pricing.

Environmental Emissions

With respect to the six assumptions you identified as having "additional concerns related to [their] precision," management disagrees as to approach that the EIS for a nationwide program of the NGDV's scale would have benefited from greater precision. While it is possible for an agency to analyze more and to expound on a subject in greater detail, the question is not whether a particular analysis could have been done, but whether the addition of such analysis would meaningfully inform the public and assist the agency in making an informed decision.

Given the OIG's recognition that the EIS identified the "relative and notable benefits of BEVs compared to ICE," management generally disagrees that the EIS would have benefited from the inclusion of yet more analyses. The addition of more analyses in a quest for greater precision would have risked making the EIS less accessible to the public rather than more. It is for this reason that NEPA requires that EISs be "concise, clear, and to the point," and avoid "the accumulation of extraneous background data."¹

¹ 40 CFR 1502.1.

For the OIG's finding for Assumption 2 that the Postal Service "omitted starting and refueling emissions," which are "key vehicle operations [whose exclusion] likely underestimated ICE vehicle emissions of non-carbon dioxide pollutants," management disagrees that such emissions represent "key vehicle emissions." Indeed, in considering what to analyze in the EIS, the Postal Service found that starting and refueling emissions would be a negligible fraction of the vehicles' total emissions as compared to their on-road emissions. Furthermore, such an analysis would have required the Postal Service to employ numerous assumptions regarding the distribution of vehicles at the time of their refueling and the weather. Management disagrees that the exclusion or inclusion of a negligible quantity of emissions which would necessitate the use of multiple assumptions can be said to represent any underestimate or overestimate of note.

As a second example, with respect to Assumption 4, management disagrees that the Postal Service "did not account for future emissions reductions and used outdated electricity generation mix data" for the power grid. In Response No. 27 to Public Comments, the Final EIS included a lengthy consideration of different forecasts for possible future changes to the U.S. power grid. The Postal Service applied a Department of Energy forecast incorporating very BEV-favorable assumptions to the air emissions and social cost of carbon calculations. As detailed below, management is willing to consider improved methodologies for calculating emissions; however, we believe it inaccurate to find that the possibility of future energy grid emission reductions had not been considered. The possibility was thoroughly considered, as reflected in the EIS.

Finally, management maintains that the Postal Service used the correct vehicle category in MOVES 2014b, when considering both NGDV weight (8,501 pounds gross vehicle weight rate at the time of the final EIS) and engine size (2 liter; 4 cylinders). That category, light commercial truck, falls within the MOVES2014b Model Class 32, encompassing vehicles with a weight range of 6,000 to 10,000 pounds and various engine sizes. In contrast, the light heavy-duty truck (Regulatory Class 40) recommended in the draft report would largely encompass vehicles with much larger engines (e.g., 6 Liter; 8 cylinders) and a higher weight (8,501 to 10,000 pounds), and thus risk significantly overestimating the NGDV's emissions. Therefore, it was more appropriate to represent NGDV as a light commercial truck (Model Class 32, which is a combination of Regulatory Classes 30 and 40) rather than solely representing it as Regulatory Class 40. For these reasons, the Postal Service intends to use the comparable light commercial truck category in MOVES3 to represent the NGDV in the SEIS.

Recommendation [1]:

We recommend the **Vice President, Corporate Affairs**, in coordination with the **Vice President, Supply Management**, include an evaluation of more alternatives in the Supplemental Environmental Impact Statement that are technically and economically feasible and meet the purpose and need for the proposed action.

Management Response/Action Plan:

Management **agrees** with this recommendation. The alternatives under consideration for the SEIS are technically and economically feasible and meet the purpose and need for the proposed action. In addition, the Preferred Alternative currently being considered will "include a mix of either RHD or LHD COTS vehicles or ICE and BEVs."

Target Implementation Date: 12/31/2023

Management has selected an implementation date by which time a Record of Decision for the SEIS should conservatively have been published, including all legally required minimum public comment and wait periods.

Responsible Official:

Vice President, Corporate Affairs and Vice President, Supply Management

Recommendation [2]:

We recommend the **Vice President, Corporate Affairs**, in coordination with the **Vice President, Supply Management**, update the total cost of ownership analysis in the Supplemental Environmental Impact Statement, such as incorporating more current and/or regionally based data.

Management Response:

Management **agrees** with this recommendation. The TCO was designed to support procurement decisions through the comparison of vendors in a competitive solicitation, and not the optimal deployment of ICE or BEVs, and the TCO analysis in the EIS was legally sufficient and appropriate. Discussion of TCO in the SEIS will incorporate the most current data at the time of preparation. Additionally, the current TCO model applies state-level adjustments for fuel and electricity prices against a national baseline to better refine its cost estimates.

Target Implementation Date: 12/31/2023

Management has selected an implementation date by which time a Record of Decision for the SEIS should conservatively have been published, including all legally required minimum public comment and wait periods.

Responsible Official:

Vice President, Corporate Affairs and Vice President, Supply Management

Recommendation [3]:

We recommend the **Vice President, Corporate Affairs**, in coordination with the **Vice President, Supply Management**, update the environmental analysis assumptions in the Supplemental Environmental Impact Statement to more fully reflect NGDV emissions.

Management Response:

Management **agrees** that its environmental analyses, including underlying assumptions, will be updated in the SEIS. Management has noted above disagreement regarding the accuracy and materiality of the environmental analysis assumptions questioned. Management intends to include reasonable estimates for starting and refueling emissions, upstream criteria pollutant emissions and electrical grid losses. Future emissions reductions from expected greening of the U.S. power grid will be accounted for through use of the Department of Energy's Greenhouse gases, Regulated Emissions and Energy use in Technologies (GREET) model, as opposed to the EPA eGRID model used in the EIS.

Target Implementation Date: 12/31/2023

Management has selected an implementation date by which time a Record of Decision for the SEIS should conservatively have been published, including all legally required minimum public comment and wait periods.

Responsible Official:

Vice President, Corporate Affairs and Vice President, Supply Management

Signature of Official(s):

E-SIGNED by Judith.A De Torok
on 2023-03-30 11:30:42 CDT

Vice President, Corporate Affairs

E-SIGNED by MARK GUILFOIL
on 2023-03-30 12:14:33 CDT

Vice President, Supply Management

cc: Manager, Corporate Audit Response Management

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