Public Hearing to Consider Proposed Amendments to the Advanced Clean Fleets and Low Carbon Fuel Standard Regulations

Staff Report: Initial Statement of Reasons

Date of Release: August 1, 2025

Scheduled for Consideration:

September 25, 2025

Table of Contents

List of Acronyms or Abbreviations

2020 MSS	2020 Mobile Source Strategy
2022 ISOR	2022 Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons
2022 SIP Strategy	California's 2022 State Implementation Plan
4WD	Four-Wheel Drive
AB	Assembly Bill
ACF	Advanced Clean Fleets
ACT	Advanced Clean Trucks
ACWA	Association of California Water Agencies
AFLEET	Alternative Fuel Life-Cycle Environmental and Economic Transportation
ATCM	Airborne Toxic Control Measure
BACT	Best Available Control Technology
BAU	Business as Usual
BenMAP- CE	Benefit Mapping and Analysis Program – Community Edition
BEV	Battery Electric Vehicles
CARB or Board	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CMUA	California Municipal Utilities Association
CNG	Compressed Natural Gas
CO_2	Carbon Dioxide
COI	Cost of Illness
CPUC	California Public Utilities Commission
CTP	Clean Truck Partnership
CWA	California Water Association
DC	Direct-Current
DEF	Diesel Exhaust Fluid
EA	Environmental Analysis
ED	Emergency Department

EER	Energy Efficiency Ratio
EIR	Environmental Impact Report
EMA	Engine Manufacturers Association
EMFAC2021	Emissions Factor Inventory Model of 2021
EMFAC	Emission Factor Inventory Model
ER	Emergency Room
ePTO	Electric Power Take-Off
EVSE	Electric Vehicle Supply Equipment
FCEV	Fuel Cell Electric Vehicles
Final ACF EA	Final EA to the Advanced Clean Fleets Regulation
Final EA	Final Environmental Analysis to the Advanced Clean Fleets Regulation
Final LCFS EIA	Final Environmental Impact Analysis for the LCFS Regulation
GHG	Greenhouse Gas
GVWR	Gross Vehicle Weight Rating
GWh	Gigawatt-hours
HDI&M	Heavy-Duty Inspection and Maintenance
HRI	Hydrogen Refueling Infrastructure
HSC	Health and Safety Code
HVIP	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project
ICE	Internal Combustion Engine
IPT	Incidence-per-ton
ISOR	Initial Statement of Reasons
Kwh	Kilowatt-hour
LADWP	Los Angeles Department of Water and Power
LCFS	Low Carbon Fuel Standard
LMD-HRI	Light-and-medium-duty Hydrogen Refueling Infrastructure
LER	Large Entity Reporting
$MTCO_2$	Metric Tons of Carbon Dioxide
MT/yr	Metric Tons Per Year
MWDSC	Metropolitan Water District of Southern California
MY	Model Year
NAICS	North American Industry Classification System

NCPA	Northern California Power Agency
NOx	Nitrogen Oxides
NZEV	Near Zero-Emission Vehicle
OAL	Office of Administrative Law
OEM	Original Equipment Manufacturer
PHEV	Plug-In Hybrid-Electric Vehicle
$PM_{2.5}$	Particulate Matter of 2.5 micrometers of smaller
PM	Particulate Matter
PTO	Power Take Off
PUC	Public Utilities Code
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCPPA	Southern California Public Power Authority
SCR	Selective Catalytic Reduction
SLG	State and Local Government
SMUD	Sacramento Municipal Utility District
tpy	Tons per year
TRUCRS	Truck Regulation Upload, Compliance and Reporting System
TSD	Technical Support Document
TTW	Tank-to-Wheel
U.S. EPA	United States Environmental Protection Agency
VIN	Vehicle Identification Number
VSL	Value of Statistical Life
WTP	Willingness-to-pay
ZE	Zero emission
ZEB	Zero-Emission Bus
ZEV	Zero-Emission Vehicle

I. Executive Summary

Mobile sources and the fossil fuels that power them are the largest contributors in California to the formation of ozone, greenhouse gas (GHG) emissions, fine particulate matter (PM), and toxic diesel PM. In California, the transportation sector alone is a major contributor to smog and accounts for 38% of total GHG emissions (48% when upstream emissions from fuel is included). The California Air Resources Board (CARB, or Board) adopted the Advanced Clean Fleets (ACF) regulation which became effective on October 1, 2023. The ACF regulation is part of California's overall strategy to accelerate a large-scale reduction in tailpipe emissions by phasing in zero-emissions (ZE) medium- and heavy-duty vehicles where feasible over the upcoming decades. Under the ACF regulation, fleets are anticipated to meet their medium- and heavy-duty zero-emissions vehicle (ZEV) purchase requirements using a combination of battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV) and with near-zero-emission vehicle (NZEV) technologies like plug-in hybrid electric vehicles prior to 2035.

On October 8, 2023, the Legislature enacted Assembly Bill (AB) 1594 (Garcia, E., Stats. 2023, ch. 585) which directs CARB to amend the ACF regulation to provide additional flexibility for public agency utilities as defined in statute. Specifically, AB 1594 directs CARB to allow a public agency utility to submit comprehensive usage data for a class of vehicles that does not exclusively rely on the lowest mileage reading and does not exclude the highest usage days when applying under ACF's Daily Usage Exemption. AB 1594 also requires CARB to define a "traditional utility-specialized vehicle" and to consult with public agency utilities to determine what criteria can be used to determine the end-of-life for traditional utility-specialized vehicles without regard to the model year of the vehicle being replaced.

Public agency utilities provide a quarter of California's electricity needs, treat 90% of California's residential water supply, and deliver water to California's homes, farms and businesses. Public agency utilities provide critical services such as maintaining safe, reliable electricity and water, as well as restoring water and power after severe weather events such as wildfires and atmospheric river events. Some public agency utilities provide mutual aid by deploying portions of their fleet to restore critical services throughout the state, and, for larger, infrequent disasters, mutual aid fleet assets are deployed across the nation. Public agency utilities deploy traditional utility-specialized vehicles around-the-clock to restore grid outages, sometimes requiring long deployments in rural areas where ZEV fueling networks are harder to access.

Primary concerns raised by public agency utilities during the ACF regulation's rulemaking included concerns regarding whether ZEVs would be available in needed vehicle configurations, the lack of available NZEVs or FCEVs in the near-term, and the time required to charge BEVs in the field. Another concern regarding mutual aid fleets is the nascent nationwide fast direct current (DC)-charging and hydrogen fueling networks. The adopted ACF regulation addressed these near-term concerns through the ZEV Purchase Exemption, Daily Usage Exemption, and the Mutual Aid provision. The ZEV Purchase Exemption allows any State and Local Government Agency (SLG) fleet to purchase a replacement internal combustion engine (ICE) vehicle if the needed ZEV configuration is not available. The Daily Usage Exemption allows any SLG fleet to purchase a replacement ICE vehicle if a battery electric vehicle (BEV) is available, but the BEV's battery capacity does not meet the fleet's daily usage or mileage needs. Lastly, the Mutual Aid provision allows any SLG fleet owner to

continue to purchase ICE vehicles until they comprise 25% of the total number of non-exempt vehicles in their fleet. Even with these accommodations, public agency utilities have continued to express near-term concerns that available BEVs will not meet their use cases if a major emergency event were to occur.

Public agency utilities are requesting earlier access to exemptions than would otherwise be allowed under the ACF regulation. The default compliance method for SLG fleets is the ZEV Purchase Schedule[1] which allows a fleet to keep their existing ICE vehicles as long as they need them. However, it should be noted that fleet owners have the option to use the ZEV Milestones Schedule, already part of ACF, which provides fleets considerable flexibility to purchase ICE vehicles and apply for exemptions at any vehicle age if the fleet meets specified ZEV percentages at key dates.

Since public agency utilities had requested expediency, CARB staff implemented AB 1594 in two steps. The first step was to pursue non-discretionary portions as Section 100 changes (California Code of Regulations (CCR), Title 1, § § 100(a)(5) and (6)). On August 26, 2024, Office of Administrative Law (OAL) approved the Section 100 changes to include a new definition of "public agency utility" and to allow a public agency utility to retain the three highest daily mileage readings from the lowest 30 daily readings when applying for a Daily Usage Exemption. These changes became effective on October 1, 2024. The second step would be accomplished by the Proposed SLG Amendments that would define a "traditional utility-specialized vehicle" and to provide such vehicles earlier access to exemptions than for other vehicle types.

As part of this rulemaking, CARB staff is also proposing additional changes to clarify the scope and applicability of the ACF regulation as well as existing compliance flexibilities. Staff is proposing to copy the relevant text set forth in CCR, title 13, section 2015 for ZEV Milestones Option to improve readability for SLG fleets who are using the ZEV Milestones Option. Staff made several other changes in response to feedback received during the public workshops held in April and October of 2024. Other proposed changes besides the Section 100 changes were made to the Daily Usage Exemption to allow for a more direct comparison between a BEV and an ICE vehicle for duty cycles that require the vehicle's power while stationary. Another change includes a requirement that, when granted an exemption to purchase a traditional utility specialized vehicle, the utility must solicit bids for electric power take-off (ePTO) versions of the vehicle, in addition to traditional PTO. The public agency utility is not required to purchase the ePTO version of the vehicle.

The Proposed SLG Amendments fully meet the requirements of AB 1594 and attempt to strike a balance between providing public agency utilities with the flexibility they request while continuing to make incremental progress towards reducing tailpipe emissions with the cleanest transportation technologies available.

Lastly, the proposed amendments would repeal parts of the ACF regulation, specifically the Drayage requirements in Title 13, Chapter 1, Article 3.2, Section 2014, and the High Priority and Federal Fleet requirements in Title 13, Chapter 1, Article 3.2, Section 2015 (Proposed Repeal). On January 13, 2025, CARB withdrew its request for a waiver and for the addition of

[1] SLG fleets located in non-designated counties and those with 10 or more vehicles are subject to the requirements where at least 50% of new vehicle purchase must be ZEV or NZEVs. Beginning January 1, 2027, all SLG fleets must only purchase ZEVs or NZEVs.

the ACF regulation to California's emissions control program. The Trump administration had previously evidenced its opposition to California's authority to establish GHG and zero emission standards for new motor vehicles,[2] and has also stated its continued opposition to that authority.[3,4,5,6,7] Accordingly, in light of the United States Environmental Protection Agency's (U.S. EPA) lack of final action on CARB's request for waiver and authorization before the incoming administration assumed its official duties on January 20, 2025, CARB determined that withdrawing its request was appropriate.

In addition, the Proposed Amendments make related changes to the Low Carbon Fuel Standard (LCFS) Regulation to provide additional LCFS crediting revenue options for owners of hydrogen refueling infrastructure.

II. Introduction and Background

On August 28, 2023, CARB adopted the ACF regulation. The ACF regulation is part of CARB's overall strategy to accelerate a large-scale reduction in tailpipe emissions by focusing on deploying increasingly lower emitting medium- and heavy-duty vehicles, including ZEVs to the greatest extent feasible. The ACF regulation is part of a broader strategy to increase clean, affordable transportation options to promote innovative freight movement, and increase the overall efficiency of California's transportation system. The ACF regulation was drafted to work in conjunction with the Advanced Clean Trucks (ACT) regulation, to ensure that the lowest emitting medium- and heavy-duty vehicles are sold and used in California.[8] Public agency utilities are subject to the SLG requirements of the ACF regulation.

On October 8, 2023, the Legislature enacted AB 1594 (Garcia, E., Stats. 2023, ch.585) which directs CARB to amend the ACF regulation to provide additional flexibility to most public

---

[2] On September 27, 2019, U.S. EPA, in conjunction with NHTSA, published ''The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program'' (SAFE 1), 84 Fed. Reg. 51310 (Sept. 27, 2019) in which it withdrew a portion of the waiver it had previously granted for California's Advanced Clean Cars (ACC) program– specifically, for California's zero emission vehicle (ZEV) mandate and the GHG emission standards within California's ACC program. In April 2022, U.S. EPA reconsidered its SAFE 1 action and rescinded its 2019 withdrawal of California's waiver. 87 Fed. Reg. 14332 (Mar. 14, 2022).

[3] Donald J. Trump, *Twitter* , September 18, 2019 11:19:24 AM EST, ("The Trump Administration is revoking California's Federal Waiver on emissions in order to produce far less expensive cars for the consumer, while at the same time making the cars substantially SAFER. This will lead to more production because of this pricing and safety...").

[4] Davenport, Coral, *https://www.nytimes.com/2019/10/03/climate/trump-california-environment.html*, NEW YORK TIMES, October 3, 2019.

[5] Baertlein, Lisa & Shepardson, David, *https://www.reuters.com/business/environment/california-withdraws-clean-truck-epa-waiver-request-ahead-trump-inauguration-2025-01-15/*, REUTERS, January 15, 2023.

[6] United States Environmental Protection Agency Admin. Lee Zeldin, 00:06:21-00:06:43 (23 sec), *https://rollcall.com/factbase/trump/transcript/donald-trump-remarks-executive-orders-white-house-february-13-2025/*, February 13, 2025, ("Congress will have the opportunity through the Congressional Review Act to make that waiver go away.").

[7] United States Environmental Protection Agency, *https://www.epa.gov/newsreleases/trump-epa-transmit-california-waivers-congress-accordance-statutory-reporting*, February 14, 2025.

[8] On June 12, 2025, President Trump signed congressional resolutions purporting to overturn U.S. EPA's decision to grant California a waiver to control emissions of new trucks regulated by the Advanced Clean Trucks Regulation and the Omnibus Regulations. Those resolutions are currently the subject of litigation. The resolutions do not affect the Clean Truck Partnership nor do they affect the obligations of state and local public fleets to comply with those regulations.

agency utilities. Specifically, the bill requires CARB to define a "traditional utility-specialized vehicle" and provide authorization for most public agency utilities to purchase replacements for traditional utility-specialized vehicles that are at the end of life when needed to maintain reliable service and respond to major foreseeable events, including severe weather, wildfires, natural disasters, and physical attacks. The bill also requires CARB to amend the requirements of the Daily Usage Exemption to allow a public agency to use comprehensive data for the same vehicle class and configuration. These amendments are necessary as public agency utilities provide critical services such as maintaining safe, reliable electricity and water, as well as restoring water and power after severe weather events such as wildfires. Some public agency utilities also deploy fleet assets for mutual aid to assist other municipalities throughout the state and nationwide. Public agency utilities provide 25%[9] of California's electricity needs, and clean and deliver over 90%[10] of the residential water supply.

Under the ACF regulation, SLG fleets are anticipated to meet their medium- and heavy-duty ZEV purchase requirements using a combination of BEVs and FCEVs. Additionally, the SLG fleet requirements can be met with NZEV technologies like plug-in hybrid electric vehicles (PHEVs) prior to 2035. Beginning January 1, 2024, the ACF regulation requires most public agency utility fleets to start purchasing at least 50% of their annual on-road medium- and heavy-duty vehicle purchases as ZEVs. Beginning January 1, 2027, all SLG fleets must only purchase on-road medium- and heavy-duty ZEVs. SLG fleets located in a designated low population county and those that own, lease, or operate 10 or fewer vehicles are subject to different compliance schedules that require qualifying fleets to only purchase ZEVs beginning January 1, 2027. This is referred to as the ZEV Purchase Schedule and is the default compliance pathway for all SLG fleets. Alternatively, SLG fleets can choose to permanently comply using the ZEV Milestones Option if they prefer the flexibility of phasing-in ZEVs based on the suitability of different vehicles in their fleet. A fleet choosing the ZEV Milestone Option will stay in compliance as long as they meet the scheduled ZEV targets which require an increasing percentage of their California fleet to be ZEVs. The ZEV Milestones Option allows for ICE vehicles to be added to the fleet as long as the percentage thresholds are being met which allows for greater flexibility. For situations where a fleet owner cannot comply due to circumstances beyond their control, the regulation includes a variety of exemptions and extensions that allow for ICE vehicle purchases or more time to comply.

The eligibility requirements for some exemptions are based on the fleet's compliance method. For the ZEV Purchase Schedule, existing ICE powered vehicles must be at least 13 years old before applying for certain exemptions to purchase replacement ICE vehicles. For the ZEV Milestones Option, there are no vehicle model year nor minimum mileage requirement before fleet owners can apply for exemptions. To be eligible for an exemption, a fleet owner must demonstrate their next applicable ZEV Milestone cannot be reached without exemptions by requesting and obtaining exemptions for all ICE vehicles in their California fleet no later than one year before the next applicable ZEV Milestone date.

---

[9] California Energy Commission, California's Energy Governing Institutions, 2019, (weblink: *https://www.energy.ca.gov/sites/default/files/2019-06/Fact_Sheet_California_Energy_Governing_Institutions.pdf*, last accessed September 2024).

[10] Public Policy Institute of California, Community Water System totals collected, 2023, (weblink: *https://www.ppic.org/publication/water-use-in-californias-communities/* , last accessed July 2024).

The two exemptions within the scope of the Proposed SLG Amendments are the ZEV Purchase Exemption and Daily Usage Exemption. These exemptions allow a fleet owner to purchase an ICE vehicle in lieu of a ZEV, if the criteria are met. The ZEV Purchase Exemption can be used by a fleet owner to replace an ICE powered vehicle with a new ICE powered vehicle if a ZEV is not available to purchase in the same or next higher weight class with the same configuration as the vehicle being replaced. The Daily Usage Exemption allows fleet owners to request an exemption to purchase an ICE vehicle even if the needed vehicle configuration is available as a BEV, but the operating range does not meet the fleet's needs. The Daily Usage Exemption requires a requesting fleet to report the daily mileage and energy used by each ICE vehicle of the same weight class and configuration as the vehicle needing to be replaced. The exemption will not be granted if there are NZEVs or FCEVs available in the weight class or next highest weight class in the needed vehicle configuration, or if there is an available BEV with a battery capacity above a specified threshold. The Daily Usage Exemption relies on data from existing ICE vehicles being replaced and does not apply when adding vehicles that are not replacing vehicles in the fleet. However, fleets may opt into the ZEV Milestone Schedule which would provide flexibility to add new ICE vehicles to their fleet. Fleets using either compliance method may access the Daily Usage Exemption if at least 10% of their California fleet is comprised of ZEVs or NZEVs.

A. Need to Lower Vehicle Emissions

The need to deploy the cleanest vehicles on the road started with Dr. Arie Haagen-Smit's discovery of what causes photochemical smog and the realization that vehicular exhaust is a major contributor.[11] The means to regulate major sources of smog, including motor vehicles, found a foothold when Reagan signed into law the Mulford Carell Air Resources Act of 1967 which created CARB. Just three years later the federal Clean Air Act, expanded on the 1967 Air Resources Act, which recognized California's earlier efforts and authorized the state to set its own separate and stricter-than-federal vehicle emissions regulations to address the extraordinary circumstances of population, climate, and topography that generates the worst air in the nation. This authority allows CARB to set stricter vehicle emission control standards than federal law. California's clean air mandates were broadened when Governor Schwarzenegger signed AB 32 (Núñez, Chapter 488, Statutes of 2006) into law which directed CARB to create a plan to reduce GHG emissions.[12] California's latest emission goals were set by Governor Newsom's Executive Order N-79-20 and the Sustainable Freight Action Plan that will help achieve required emission reductions as outlined in the State Implementation Plan,[13] and CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update).[14]

California's emissions goals have recently been reinforced by the Clean Truck Partnership (CTP). The CTP is an agreement between CARB, the Truck and Engine Manufacturers Association (EMA), and other major truck manufacturers that represent over 90% of California's truck market. As part of the agreement, CARB agreed to provide more lead time

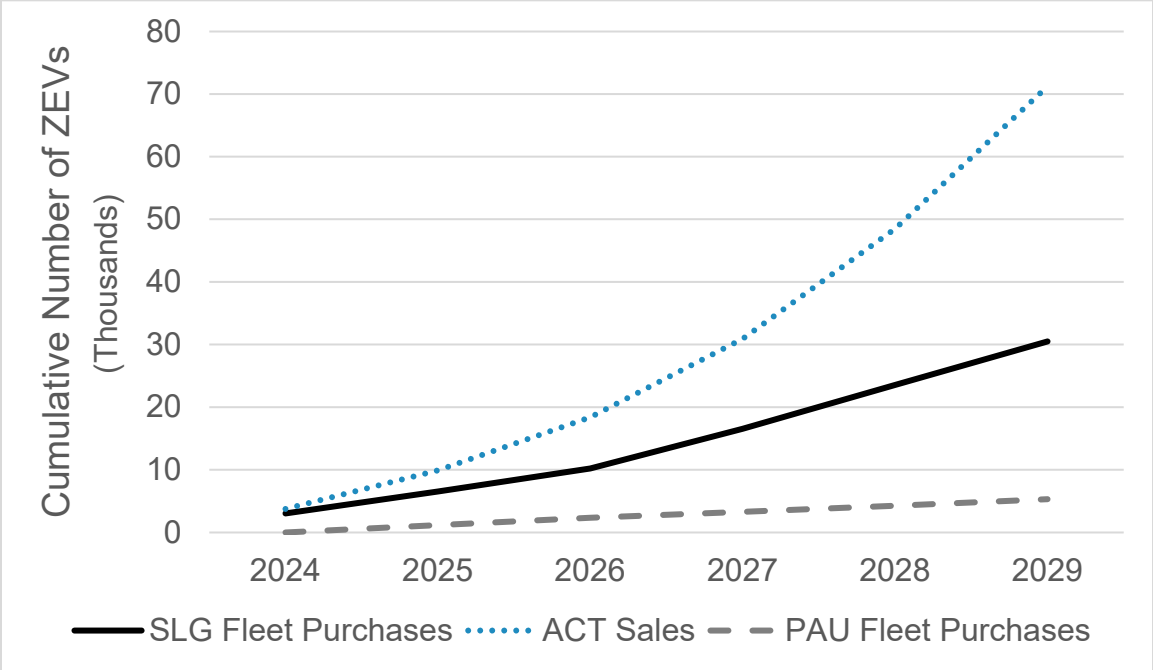
---

[11] CARB, History, (weblink: *https://ww2.arb.ca.gov/about/history*, last accessed April 29, 2025).
[12] Amended by SB 32 (Pavley, Stats. 2016, ch. 249), and AB 1279 (Muratsuchi, Stats. 2022, ch. 337).
[13] CARB, 2022 State Strategy for the State Implementation Plan, September 22, 2022, (weblink: *https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf*, last accessed April 30, 2025).
[14] CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022 (web link: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents, last accessed May 2022).

for manufacturers to meet existing regulatory requirements before imposing new regulations and in exchange, manufacturers agreed to meet California's heavy-duty vehicle standards such as the ACT regulation and the 100% ZEV sales by 2036 requirement regardless of whether any other entity challenges California's authority to set more stringent emissions standards under the federal Clean Air Act.

As shown in Figure 1, the Proposed Repeal of the Drayage, High-Priority and Federal Fleets requirements of the ACF regulation means the projected cumulative number of ZEVs deployed by implementing the SLG requirements now falls below the expected sales numbers from the ACT regulation and by original equipment manufacturers (OEM) that signed the CTP.[15] This means any emission reductions from SLG fleets are complementary to, but not additional to, those already claimed as part of the ACT regulation and the CTP. This change in no way minimizes the role SLG fleets will play in achieving cleaner air by 2045. In fact, the emission reductions achieved by SLG fleets implementing the ACF regulation fills part of the void caused by the Proposed Repeal and brings CARB one step closer to meeting California's vehicular emission and air quality standards. Figure 1 also shows the projected supply of ZEVs into California because of the ACT regulation and the CTP is greater than the projected demand from all SLG fleets, including public agency utility (PAU) fleets. This means, after the Proposed Repeal, OEMs will continue to offer enough ZEVs to meet the projected demand from ACF alone.

Figure 1: Projected ZEV Population in California's SLG Fleet, Public Agency Utility (PAU) Fleet and CTP Sales for Calendar Years 2024 to 2029



[15] CARB, Updated Advanced Clean Fleets Inventory Analysis, 2023.

B. Overview of Assembly Bill 1594 and Proposed SLG Amendments

On October 8, 2023, the Legislature enacted AB 1594 (Garcia, E., Stats. 2023, ch. 585) which directs CARB to amend the ACF regulation to provide additional flexibility for public agency utilities. The bill defines a "public agency utility"[16] and directs CARB to amend ACF to allow public agency utilities to purchase replacements for traditional utility-specialized vehicles that are at the end of life without regard to the model year of the vehicle being replaced (i.e., they do not have to wait until the vehicle is 13 years old). Lastly, the bill states for the purposes of determining the daily usage of a medium- or heavy-duty vehicle, a public agency utility may provide comprehensive usage data for a class of vehicles that does not exclusively rely on the lowest mileage reading and does not exclude the highest usage days. Since public agency utilities requested expediency, CARB staff implemented AB 1594 in two steps. The first step was to pursue non-discretionary portions as Section 100 changes (CCR, Title 1, § § 100(a)(5) and (6)) which are described in detail below. These Section 100 changes were possible as AB 1594 contained changes that CARB had no discretion over which allowed use of the expedited Section 100 process. The second step would be accomplished by the Proposed SLG Amendments to define a "traditional utility-specialized vehicle" and to give those types of vehicles earlier access to exemptions than for other vehicle types.

1. Section 100 Changes

On August 26, 2024, the Office of Administrative Law (OAL) approved CARB's Section 100 changes, which included a new definition of "public agency utility" and changes to the Daily Usage Exemption. These changes allow the newly defined public agency utilities to submit a daily usage report that does not exclude the three highest mileage readings of traditional utility-specialized vehicles recorded within a period of at least 30 consecutive workdays in their reports that public agency utilities seeking a daily usage exemption must submit to CARB. Using all of the daily mileage readings means the vehicle is more likely to qualify for an exemption. In fact, in many sample data sets the vehicle was more than twice as likely to qualify for the exemption with the change.

The above-mentioned Section 100 changes to the Daily Use Exemption also allow public agency utilities to include the three highest daily mileage for all the vehicles in their fleet, not just their traditional utility-specialized vehicles. On August 26, 2024, OAL approved the Section 100 changes which expedited non-discretionary elements of AB1594. The discretionary parts of AB 1594 that require Board approval are included in these Proposed SLG Amendments[17]such as the definition of "traditional utility-specialized vehicles" eligible for the expanded exemption provisions and how to establish the early eligibility of such vehicles for exemptions.

---

[16] Local publicly owned electric utility as defined in Section 224.3 of the Public Utilities Code, a community water system, as defined in Section 116275 of the Health and Safety Code, a water district, as defined in Section 20200 of the Water Code, and a wastewater treatment provider, as defined in Section 116773.2 of the Health and Safety Code.

[17] Throughout this document, "Proposed Amendments" refers to the entire amendment package. "Proposed SLG Amendments" refers to the portion of the amendments specific to the SLG requirements. "Proposed Repeal" refers to the portion of the amendments specific to the repeal of the High Priority, Federal and Drayage portions of the ACF regulation.

2. Proposed State and Local Government Amendments

The Proposed SLG Amendments primarily implement the portions of AB 1594 that require CARB to exercise its discretion. These include a proposed definition for a traditional utility-specialized vehicle, and a provision allowing public agency utilities to request earlier access to the ZEV Purchase and Daily Usage Exemptions for such vehicles.

The Proposed SLG Amendments additionally establish a requirement for public utility agencies to initiate a bid for electric power takeoff (ePTO), as defined below, when an exemption is granted under the early access provision. The Proposed SLG Amendments also limit a public agency utility fleet's broader access to the Daily Usage Exemption to only vehicles that meet the definition of a "traditional utility-specialized vehicle" as discussed below.

a. Proposed Definition of "Traditional Utility-Specialized Vehicle"

The proposed definition for a "traditional utility-specialized vehicle" is an ICE vehicle with:

- a gross vehicle weight rating (GVWR) greater than 10,000 pounds;
- a body configuration that is not designed to primarily carry cargo or passengers;
- maximum limits for tongue weight, axle loading, and a gross combination weight rating;
- is operated at least 51% of the time to maintain reliable public utility services;
- and is either:
    - equipped with power take-off (PTO) device that draws power directly from the engine or transmission, or
    - equipped with four-wheel drive or six-wheel drive.

Examples of traditional utility-specialized vehicle configurations include trucks commonly known as digger derricks, bucket trucks, underground cable pullers, overhead cable pullers, cranes, aerial booms, water tanker trucks, dump trucks, line clearance tree trimming trucks with bucket arms, insulator washers, grapple loaders, hydro excavators, mobile water purification trucks, and all-wheel drive versions of any configuration. Traditional utility-specialized vehicles used by public agency utilities are required for specific jobs that help maintain reliable utility service and respond to extreme weather events.

Besides the traditional utility-specialized vehicles described above, utilities deploy a variety of other vehicle configurations that perform general work and would not qualify under the proposed definition. This includes pickup trucks, service trucks, and flatbed trucks which are commonly deployed by public agency utilities. AB 1594 early access provisions are restricted to traditional utility-specialized vehicles because of the critical services only those specialized equipment can perform.

b. Early Access to the ZEV Purchase and Daily Usage Exemptions

According to the ACF regulation, the minimum age that a vehicle is eligible for the Daily Usage and ZEV Purchase Exemptions is 13 years for SLG fleets that comply with the default ZEV Purchase Schedule. This minimum vehicle age criteria does not apply to exemptions for fleets that use the alternative ZEV Milestones Option. The proposed early access provisions allow a public agency utility to request and receive a ZEV Purchase Exemption or a Daily Usage Exemption without meeting the minimum vehicle age limit of 13 years. When the ACF regulation was initially adopted, CARB established these qualifying criteria to ensure that fleets would not prematurely request exemptions within the normal useful life of an ICE vehicle to increase the likelihood that no ZEV would be capable of performing the same work as the ICE

vehicle that the fleet owner was seeking to replace. For traditional utility-specialized vehicles, the Proposed SLG Amendments would replace the minimum vehicle age requirement and instead provide public agency utilities the choice between relying on a pre-determined vehicle replacement plan approved by their decision-making authority, or a usage threshold as specified in Table 1. This table is based on an equipment replacement schedule used by California Department of Transportation and is supported by the Public Utility Commission for investor-owned utilities.[18,19] The proposed change gives public agency utilities the discretion to follow their own replacement schedule to maintain essential services by ensuring the reliability of their fleet.

Table 1: Usage Thresholds for Traditional Utility-Specialized Vehicles

Vehicle Class	Vehicle Mileage or Engine Hour Threshold
Class 3 and 4	70,000 miles
Class 5 and 6	115,000 miles
Class 7 and 8	175,000 miles
Trucks with PTO	4,000 hours

Staff is including an ePTO provision in these Proposed SLG Amendments to realize the potential significant emission reductions and opportunity for operational cost savings when fleets electrify their work truck's PTO systems. This new provision would require public agency utilities to solicit bids for an ePTO system when they purchase a new traditional utility-specialized vehicle under the early access provisions of the Proposed SLG Amendments. The bid requirement is only for vehicles that are configured to perform work that can only be done while the vehicle is stationary. Since this requirement is to bid on an ePTO rather than requiring a purchase, the outcome remains uncertain. As such, the cost, emissions and benefits of the ePTO were not quantified.

c. Other Changes

Staff is also proposing several clarifying amendments and corrections to ACF that have no impact on cost or emissions. The clarifying amendments summarized below are not anticipated to have any impacts on costs or emissions benefits because they do not change ACF's regulatory requirements but only provide more clarity and more certainty in the exemption application outcome to regulated entities. For more detailed discussion of the purpose and rationale of each of these changes, please see Chapter 0.

The clarifying amendments are summarized below:

- Modify 2030 Transit agency exemption to apply to transit support vehicles and passenger transport vehicles.
- Modify documentation details for the ZEV Purchase Exemption.

---

[18] California Department of General Services, State Administrative Manual: Chapter 4100, Section 4126, Government Code 13332.09, Executive Order B-2-11, Management Memo 13-01, (web link: *https://www.dgs.ca.gov/Resources/SAM/TOC/4100/4126*, last accessed July 26, 2024).

[19] Department of Transportation, Report No. 21-2660-071 October 2021, Table 1: Equipment Replacement Criteria, page 13, (web link: *https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/research-results/task2737-rrs-6-18-a11y.pdf*, last accessed October 3, 2024).

- Clarify exemption eligibility for fleets following the ZEV Purchase Schedule based on annual vehicle purchases and conforming changes to the ZEV Purchase and Daily Usage exemptions.
- Changes to the option to use test data within the Daily Usage Exemption on how to compare energy used by BEVs and ICE vehicles that operate truck-mounted or integrated equipment while stationary.
- Additional details on supporting documents to substantiate infrastructure delay extension requests.
- Adjust ZEV Milestones exemption application timeframe.
- Copy ZEV Milestones Option into SLG regulation.
- Make conforming changes to SLG regulation to adjust for the Proposed Repeal.

C. Proposed Repeal of Portions of the Advanced Clean Fleets Regulation

Staff are proposing to repeal certain elements of the ACF regulation. U.S. EPA has not granted California's request for a waiver and authorization for the Drayage and High Priority and Federal Fleet elements of ACF regulation. Accordingly, keeping such elements in place may cause confusion and uncertainty for entities that are currently subject to those requirements because they will be unsure if they must comply with those requirements now or in the future.

D. Low Carbon Fuel Standard Regulation Amendments

Staff are proposing to modify the derating factors for light-and-medium-duty hydrogen refueling infrastructure (LMD-HRI) crediting within the Low Carbon Fuel Standard (LCFS) regulation. Hydrogen refueling stations approved for hydrogen refueling infrastructure (HRI) crediting receive credits for their unused refueling capacity, in addition to credits generated for dispensing fuel to fuel cell electric vehicles. Staff proposes to reduce the derating factor, such that LMD-HRI stations may receive HRI credits for the full nameplate capacity (up to 1200 kilograms per day) for public stations, and 50% of the nameplate capacity for private stations. This change will provide stronger crediting support for hydrogen stations and more adequately supports development of stations that can accommodate the refueling demand of larger medium-duty hydrogen FCEV. The change will not increase the total HRI credits generated by the HRI program in aggregate, due to an existing cap on program-wide HRI crediting.

E. Crossover with Other Requirements

CARB is responsible for protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change. Meeting these public health goals has resulted in a suite of regulations to control the harmful emissions of various air pollutants emitted from the operation of medium- and heavy-duty ICE vehicles. The following is a summary of existing CARB and a relevant South Coast Air Quality Management District (SCAQMD) regulations and key requirements that apply to fleets that would be affected by the Proposed SLG Amendments.

1. Public Agencies and Utilities Regulation

In 2005, CARB approved of the rule for On-Road Heavy-Duty Diesel-Fueled Public and Utility Fleets (Cal. Code Regs., tit. 13, § 2022 et seq.) to reduce diesel particulate matter (PM) emissions from fleet vehicles operated by public agencies and the state's three largest investor-owned electrical utilities. The rule required affected owners to equip their heavy-duty vehicles with Best Available Control Technology (BACT) by December 31, 2012, with later

requirements for designated low-population counties to be in full compliance by December 31, 2017. However, some fleets in low-population counties selected the “Accelerated Turnover” option that extends their compliance deadline to fully implement the rule until December 31, 2025. Private utilities came under the Truck and Bus regulation on January 1, 2021. All the same agencies are regulated by the ACF regulation, and many of the same parties would be included in these Proposed SLG Amendments.

2. Truck and Bus Regulation

In 2008, CARB adopted the Truck and Bus regulation (Cal. Code Regs., tit. 13, § 2025 et seq.) to reduce emissions of PM and nitrogen oxides (NOx) from heavy-duty trucks and buses over 14,000 lbs. gross vehicle weight rating (GVWR). The Truck and Bus regulation affects almost all vehicles travelling in California and primarily requires that all affected vehicles meet or exceed 2010 or newer model year (MY) engine emissions by January 1, 2023. A subset of public utility fleets as defined in AB1594 are private fleets affected by the Truck and Bus regulation, and they would be impacted by the Proposed Repeal.

3. Advanced Clean Trucks Regulation

In January 2021, CARB adopted the ACT regulation (Cal. Code Regs., tit. 13, § 1963 et seq., 2012 et seq.) as part of a holistic approach to reduce emissions from medium- and heavy-duty vehicles. The U.S. EPA granted a waiver of preemption on April 6, 2023, allowing CARB to enforce ACT’s emission standards for new ZE motor vehicles. Like the ACF regulation, the goal of the ACT regulation is to achieve oxides of nitrogen (NOx) and greenhouse gas (GHG) emissions reductions through advanced clean technology, and to increase the use of ZE heavy-duty technology into applications that are well suited to its use. The ACT regulation has two components consisting of a manufacturer sales requirement and a one-time large entity reporting (LER) requirement for fleet owners.

The manufacturer sales requirement applies to manufacturers that certify incomplete chassis or complete vehicles greater than 8,500 lbs. GVWR (i.e., Class 2b-8). Manufacturers are required to sell ZEVs as a percentage of their annual total sales starting with the 2024 model year. By 2035, required ZEV sales percentages will be as follows: 55% of Class 2b–3 truck sales, 75% of Class 4–8 truck sales, and 40% of tractor sales. Compliance is based on a credit and deficit system and provides numerous flexibility provisions including: the ability to sell more ZEVs in one weight category and fewer in another, credits may also be banked and traded between manufacturers, and deficits may be carried forward into future years. Small manufacturers with fewer than 500 annual sales in California are exempt but may opt-in to the regulation and report to claim ZEV credits.

The other component of the ACT regulation is the one-time LER requirement. Large entities, which included fleet owners, businesses, government agencies, municipalities, brokers, and

others, had to report information about their vehicles if, in 2019, they operated a facility in California and met any of the following criteria:

- Had more than $50 million in revenues in the 2019 tax year from all related subsidiaries, subdivisions, or branches, and have at least 1 vehicle that operated in California;
- Owned 50 or more vehicles that operated in California in 2019;
- Dispatched 50 or more vehicles into or throughout California in 2019; or
- Government agencies (federal, State, local, and municipalities) with at least 1 vehicle in California in 2019.

LER reporting was completed in 2021 and results of the data collected are posted on the *LER webpage*. Information collected through the survey was used to assist CARB in developing policies and recommendations, such as the ACF regulation.

4. Heavy-Duty Omnibus Regulation

In September 2021, CARB adopted the Heavy-Duty Omnibus regulation. (Amending various sections of Cal. Code Regs., tit. 13.). The Omnibus regulation requires manufacturers to comply with more stringent exhaust emissions standards, test procedures, and other emissions control requirements for 2024 MY and newer California certified heavy-duty engines. The combined requirements will reduce real world in-use emissions, and key elements of the regulation include:

- Lowering NOx and PM emissions standards on existing regulatory cycles as well as certification of a new NOx standard on a new Low Load Cycle such that NOx standards are about 75% below current standards beginning in 2024 and 90% below current standards in 2027;
- Revamping the heavy-duty in-use testing program;
- Improving warranty, useful life, and emissions warranty information and reporting requirements;
- Strengthening the heavy-duty durability demonstration program;
- Improving the emissions averaging, banking, and trading program; and
- Creating powertrain certification test procedures for heavy-duty hybrid vehicles.

The Heavy-Duty Omnibus regulation provides emissions credits to manufacturers that certify the engines to a specific set of emissions standards. In addition, the Heavy-Duty Omnibus regulation provides an allowance for heavy-duty ZEVs to generate temporary NOx credits (2022 MY to 2026 MY) to incentivize the development, production, and sales of heavy-duty ZEVs in the California market. New ICE vehicles sold in California will need to meet the compliance requirements of the Heavy-Duty Omnibus regulation and manufacturers may average, bank, and trade emissions credits for the pool of engines sold for each MY. Fleets included in the Proposed SLG Amendments also purchase ICE vehicles impacted by the Heavy-Duty Omnibus regulation.

5. Clean Truck Partnership

CARB, the Truck and Engine Manufacturer's Association, and several heavy-duty manufacturers executed an agreement on July 5, 2023,[20] wherein the manufacturers agreed to

[20] CARB, EMA, and OEM Agreement, June 30, 2023, *Available at https://ww2.arb.ca.gov/sites/default/files/2023-07/Final%20Agreement%20between%20CARB%20and%20EMA%202023_06_27.pdf*.

comply with the relevant provisions of the Advanced Clean Trucks Regulation and the Omnibus Regulations as set forth in that agreement, “irrespective of the outcome of any litigation challenging the waivers or authorizations for those regulations or of CARB’s overall authority to implement those regulations.”

3. Illegal Resolutions

On June 12, 2025, President Trump signed unconstitutional and illegal resolutions under the guise of the Congressional Review Act, purporting to overturn U.S. EPA’s decision to grant California a waiver to control emissions of new trucks regulated by the Advanced Clean Trucks Regulation and the Omnibus Regulations. Those resolutions are currently the subject of litigation. The resolutions do not affect the Clean Truck Partnership nor do they affect the obligations of state and local public fleets to comply with those regulations.

6. South Coast Air Quality Management District Rule 1196

To reduce air toxic and criteria pollutant emissions, this rule 1196 requires public fleets in the South Coast Air Quality Management District’s (SCAQMD) jurisdiction (most of Los Angeles County, Orange County, South-West San Bernadino County, and most of Riverside County) operating heavy-duty vehicle fleets to acquire alternative-fuel, dual-fuel, or dedicated gasoline heavy-duty vehicles when procuring or leasing these vehicles for use within the SCAQMD's jurisdiction. ZEVs are alternative-fuel vehicles in Rule 1196. If the fleet operator obtains an approved technical infeasibility certification for this purchase, a diesel-powered heavy-duty engine or vehicle with an approved control device may be purchased. This rule applies to:

- All government agencies (such as federal, state, regional, county, and city government) with 15 or more heavy-duty vehicles;
- Any special districts (such as water, air, sanitation, and transit) with 15 or more heavy-duty vehicles; and
- School districts with 15 or more heavy-duty vehicles.

A subset of public agency fleets subject to the Proposed SLG Amendments are impacted by the SCAQMD Rule 1196 if they are within the Southern California jurisdiction of SCAQMD.

7. Clean Truck Check

The Heavy-Duty Inspection and Maintenance (HDI&M) regulation (Cal. Code Regs., tit. 13, § 2195 et seq.), referred to as the “Clean Truck Check” program, was approved by the Board in December 2021 to control emissions more effectively from non-gasoline on-road heavy-duty vehicles with a GVWR greater than 14,000 lbs. operating in California. The regulation requires affected heavy-duty vehicles to perform periodic emissions testing twice a year to show compliance at specified intervals to ensure that the emissions control systems maintain the same efficiency as the vehicle ages. ZEVs are exempted. The regulation’s requirements are implemented in three phases with initial compliance certificate requirements that began in 2023 and periodic testing requirements that began in January 2024. Fleets included in the Proposed SLG Amendments would be the same that deploy vehicles subject to the Clean Truck Check program.

8. Commercial Diesel Truck Idling Restrictions

On July 22, 2004, CARB initially adopted an Airborne Toxic Control Measure (ATCM) to limit idling of diesel-fueled commercial motor vehicles (Cal. Code Regs., tit. 13, § 2485 et seq.) and subsequently amended it on October 20, 2005, October 19, 2009, December 12, 2013, and

September 9, 2021. This ATCM requires, among other things, that drivers of diesel-fueled commercial motor vehicles with GVWR greater than 10,000 pounds, including buses and sleeper berth equipped trucks, not idle the vehicle's primary diesel engine longer than five minutes at any location. The ATCM also requires owners and motor carriers that own or dispatch these vehicles to ensure compliance with the ATCM requirements. The regulation also contains a number of exemptions that allow engine operation for power take-off, maintenance, extreme weather or emergency conditions, emergency vehicles, military and tactical vehicles, armored vehicles, workover rigs, etc.

F. Characteristics of Public Agency Utilities

AB 1594 defines “Public agency utility” as; a local publicly owned electric utility, as defined in Section 224.3 of the Public Utilities Code (PUC), a community water system, as defined in Section 116275 of the Health and Safety Code, a water district, as defined in section 20200 of the Water Code, and a wastewater treatment provider, as defined in section 116773.2 of the Health and Safety Code. This section provides a brief overview of these agencies.

1. Publicly Owned Electric Utilities

“Local publicly owned electric utility” as defined in PUC section 224.3 means a municipality or municipal corporation, a municipal utility district, a public service utility, or an irrigation district furnishing electric services, or a joint powers authority that includes one or more of these agencies and that owns generation or transmission facilities, or furnishes electric services over its own or its member’s electric distribution system.

Publicly owned utilities are not-for-profit agencies that supply and deliver electricity to their communities. Conversely, investor-owned utilities are for-profit, which makes them accountable to their shareholders over their ratepayers. All utilities receive state and federal oversight, but publicly owned utilities are overseen by their own community and ratepayers through the board of directors that the community elects to govern the utility.[21]

Local publicly owned electric utilities are essential in their communities to support local energy infrastructure providing electricity to the local government offices, maintaining streetlights and traffic signals, electric repair and maintenance for city departments and pooling utility vehicles and equipment with other municipalities.[22]

With over 40 local publicly owned electric utilities across California, from Trinity County in the north to Imperial County in the south, these not-for-profit, community-owned electric utilities provide 25% of California’s electricity needs.[23]

The Los Angeles Department of Water and Power (LADWP) and the Sacramento Municipal Utility District (SMUD) are among the largest in the state. LADWP is the state’s largest municipal power utility, supplying more than 21,600 gigawatt-hours (GWh) of power to more

---

[21] Truckee-Donner Public Utility District, Truckee-Donner Utility District webpage about us – what is a public utility?, (web link: *https://www.tdpud.org/about-us/what-is-a-public-utility*, last accessed October 22, 2024).
[22] American Public Power Association, Benefits of Public Power, (weblink: *https://www.publicpower.org/system/files/documents/municipalization-benefits_of_public_power.pdf*, last accessed on September 5, 2024).
[23] California Energy Commission, California’s Energy Governing Institutions, June 2019, (weblink: *https://www.energy.ca.gov/sites/default/files/2019-06/Fact_Sheet_California_Energy_Governing_Institutions.pdf*, last accessed September 2024).

than 4 million people in the Los Angeles region.[24] SMUD serves over 1.5 million customers across 900 square miles.[25] These utilities are known for their significant contributions to the state's energy infrastructure[26] and their focus on sustainability and renewable energy sources.

Local publicly owned electric utility fleets are used to maintain reliable power to homes and businesses. Operations include installing and repairing power lines, poles and related structures, clearing debris and trimming trees to access power lines. These utilities operate a variety of specialized utility vehicles to conduct daily operations. For example, some trucks are used to lift workers to safely fix or install pole-mounted powerlines, repair streetlights and traffic signals. Utility trucks need to tow heavy equipment to pull cable lines and manage vegetation overgrowth over a wide range of distances and over mixed terrain. Specialized trucks with four-wheel drive (4WD) are needed for servicing remote areas away from paved roads or during inclement weather. Publicly owned electric utilities also own and operate a significant amount of ordinary, unspecialized vehicles such as pickup trucks, utility trucks without specialization, box trucks and vans.

2. Community Water Systems

"Community water system" as defined in Health and Safety Code section 116275 means a "public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents of the area served by the system." Community water systems include cities, counties, regulated water utilities, regional water systems, and small water companies and districts where people live. There are approximately 3,000 community water systems in the state.[27] Of those community water systems, over 1,100 are publicly owned and over 1,700 are privately owned.[28] On average, 10% of the state's water goes to households. More than 400 large, urban water utilities supply water to over 90% of California's residents, and nearly 2,500 smaller utilities serve more rural households.

California's community water systems distribute water to homes and businesses. Water utilities build and maintain the infrastructure necessary for collecting water, purifying water, and distributing water to their customers. Some of the most common maintenance tasks they perform are to fix leaking and burst pipes to ensure mitigation of damage from flooding. They also install new infrastructure and lay down new lines of pipe to expand their coverage to new customers and new developments. Larger utilities have been investing in conservation,

---

[24] Los Angeles Department of Water and Power, (weblink: *https://www.ladwp.com/who-we-are/power-system*, last accessed September 27, 2024).
[25] Sacramento Municipal Utility District, SMUD About Us, (weblink: *https://www.smud.org/Corporate/About-us*, last accessed September 27, 2024).
[26] California Energy Commission, Energy Demand map, June 23, 2023, (weblink: *https://cecgis-caenergy.opendata.arcgis.com/documents/c8f940c510cd48319bfd645fa2122d7c/explore*, last accessed September 27, 2024).
[27] Public Policy Institute of California, Community Water System totals collected, April 2023, (weblink: *https://www.ppic.org/publication/water-use-in-californias-communities/* , last accessed July 2024).
[28] State Water Resources Control Board, Drinking Water page, Community Water Systems by Governance Types, March 25, 2021, (Weblink: *https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/california_water_systems.html#table8-1*, last accessed July 2024).

storage, new supplies, and interconnections with other utilities to improve drought resilience and adapt to the changing climate.[29]

Vehicles operated by community water systems are used for a variety of purposes, including servicing customers' needs, maintenance of valves and meters, and servicing broken or leaking pipes. In addition, these vehicles are often used to maintain or help construct elevated water storage, backup electricity for pumps, pump replacement, water distribution stations, chemical treatment plants, water testing labs, and replacing lead pipes. Community water systems use a variety of vehicles to complete tasks, including: driving to rural areas to collect samples for testing, hauling heavy machinery to construction and repair sites using heavy haul lowboys, using dump trucks to move dirt in and out of where they need to access water pipes, using stake bed trucks to haul equipment and pipes out to field locations, using hydrovac trucks to wash out and suck up blockages in pipes, and using valve operator trucks to open and close main valves.

The Metropolitan Water District of Southern California (MWDSC) is the largest drinking water supplier in California and the United States, supplying water to over 19 million people in Southern California.[30] Most of the water they provide is sourced from the Colorado River Aqueduct and the State Water Project Aqueduct that bring immense amounts of water from hundreds of miles away to supply the second largest metropolitan area population in the United States. MWDSC has an extensive infrastructure footprint which results in a significant number of service vehicles to maintain a reliable water supply to their customers.

3. Wastewater Treatment Provider

"Wastewater treatment provider" as defined in Health and Safety Code section 116773.2 is a "city, county, special district, or joint powers authority that provides wastewater collection, treatment, or disposal service through a publicly owned treatment plant…"

Publicly owned wastewater treatment plants play a crucial role in maintaining public health, environmental protection, and community well-being through the proper treatment of wastewater. This vital service prevents the spread of diseases by removing harmful pathogens and contaminants before the water is released back into the environment. Wastewater treatment plants help protect natural water bodies from pollution, preserving ecosystems and biodiversity. They help to ensure that water released into rivers, lakes, and oceans meets environmental standards. Publicly owned facilities focus on long-term sustainability and align with local, state, and federal regulations to ensure wastewater treatment meets all necessary legal standards. Public ownership allows for greater community input and local control over how wastewater is managed, ensuring that the needs and concerns of residents are addressed by the local governing board.

In California, wastewater is transferred through 100,000 miles of sanitary sewer lines and treated at more than 900 wastewater treatment plants that manage the roughly 4 billion gallons

[29] Public Policy Institute of California, Water Use in California, April 2023, (Weblink: *https://www.ppic.org/publication/water-use-in-california/* , last accessed July 2024).
[30] Metropolitan Water District of Southern California, Annual Report for 2021 fiscal year, (weblink: *https://www.mwdh2o.com/media/11941/annual-progress-reports-2020-2021.pdf* , last accessed November 2024).

of wastewater generated in the state each day.[31] Across the state, there are more than 130 local public agencies engaged in the collection, treatment and recycling of wastewater and biosolids to protect public health and the environment.[32]

Wastewater treatment plants use a variety of specialized utility vehicles in the collection, transportation, and treatment of wastewater and sewage materials as well as maintenance of the wastewater system. They use specialized utility vehicles to pump or vacuum liquid and solid waste from septic tanks, cesspools, and sewer lines. These trucks are particularly useful in residential areas and remote locations where sewer connections may be unavailable. These trucks are necessary to collect and transport waste to treatment facilities or disposal sites for proper processing. Trucks with high-pressure water jetting systems are essential in clearing sewer lines of obstructions to maintain the flow of wastewater. They also use these specialized trucks to dig and excavate around utility lines and sewer pipes to conduct repair work and perform routine maintenance.[33]

4. Water District

"Water district" as defined in California Water Code section 20200 means "any district or other political subdivision, other than a city or county, a primary function of which is the irrigation, reclamation, or drainage of land or the diversion, storage, management, or distribution of water primarily for domestic, municipal, agricultural, industrial, recreation, fish and wildlife enhancement, flood control, or power production purposes." This includes, but is not limited to, irrigation districts, county water districts, California water districts, water storage districts, reclamation districts, county waterworks districts, drainage districts, water replenishment districts, levee districts, municipal water districts, water conservation districts, community services districts, water management districts, flood control districts, flood control and floodwater conservation districts, flood control and water conservation districts, water management agencies, water agencies, and public utility districts formed pursuant to Division 7 of the Public Utilities Code commencing with §15501.

There are 1,286 districts that provide water services in the state and many of them provide more than just one of the three services: water delivery, sanitation, and flood control.[34],[35] The services and vehicles used by water districts are broadly similar to community water systems as described above. Some differences between the operation of water districts and community water systems include:

---

[31] Water Education Foundation, Wastewater Treatment Process in California, 2013, (weblink: *https://www.watereducation.org/aquapedia/wastewater-treatment-process-california#:~:text=In%20California%2C%20wastewater%20treatment%20takes%20place%20through%20100%2C000,of%20wastewater%20generated%20in%20the%20state%20each%20day.,* last accessed on September 5, 2024).

[32] California Association of Sanitation Agencies, About CASA, (weblink: *https://casaweb.org/about-us/about-casa/* last accessed October 1, 2024).

[33] CSC Truck, Understanding Sewage Trucks and Their Uses, (weblink: *https://www.municipaltruck.com/understanding-the-different-types-of-sewage-trucks-and-their-uses/*, last accessed September 5, 2024).

[34] Legislative Analyst's Office of California, Water Special Districts, March 2002, (Weblink: *https://www.lao.ca.gov/2002/water_districts/special_water_districts.html*, last accessed August 2024).

[35] Association of California Water Agencies, About Us, 2024, (weblink: *https://www.acwa.com/about/*, last accessed August 2024).

- Community water systems may be privately owned and operated by non-profit organizations while water districts are always public agencies with elected board members.
- Community water systems primarily focus on providing drinking water to their communities while water districts may offer a much broader range of water related services, as described above.
- Water districts are government entities with some level of local authority, such as taxation to fund their services, while community water systems do not have authority to tax but may directly charge fees to their users.

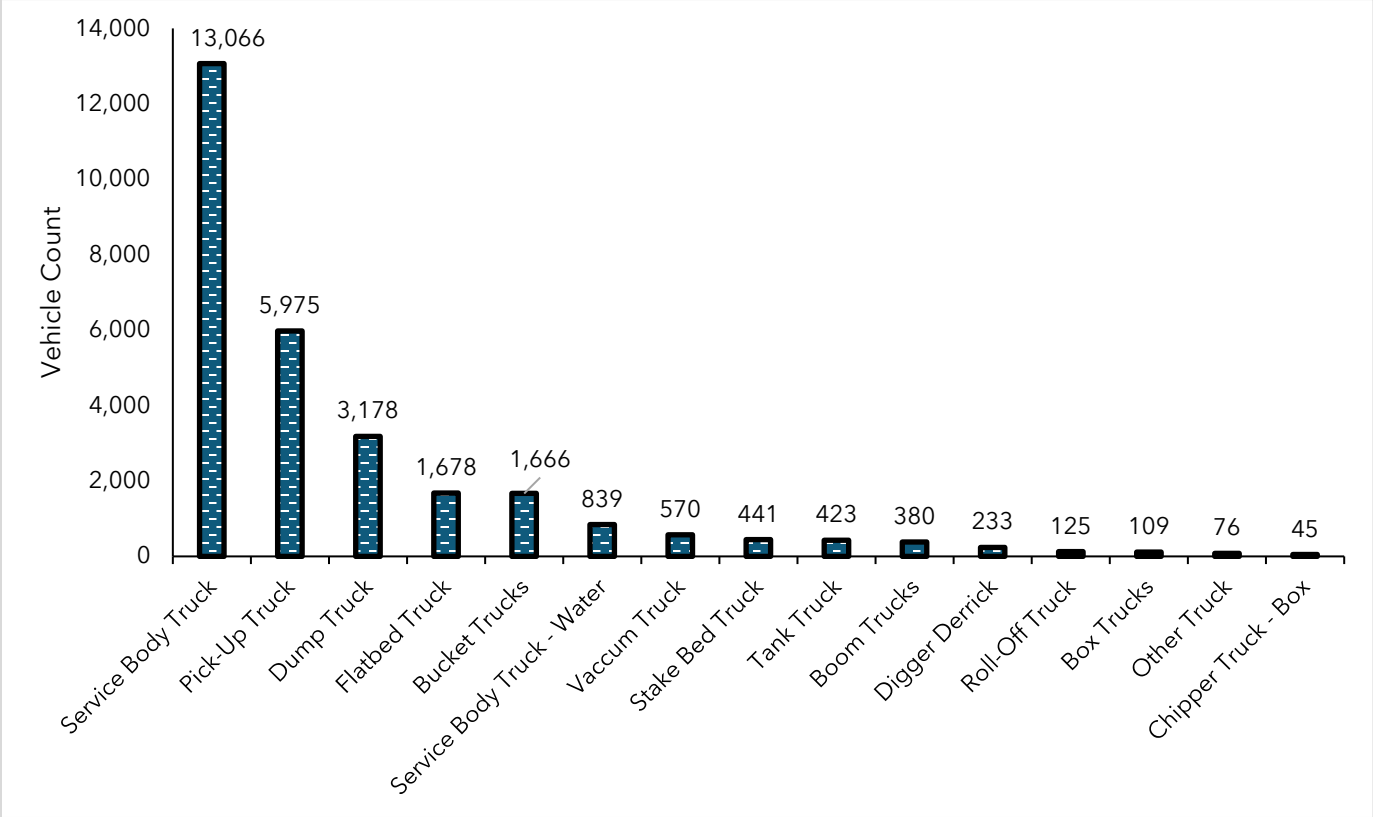
G. Background on Utility Trucks

This section describes the diverse array of on-road vehicles typically used by public agency utility fleets operating in California that would be subject to the Proposed SLG Amendments. It includes an overview of affected vehicle classes, vehicle descriptions, manufacturing practices, as well as an overview of vehicle populations and characteristics. More general information on weight classes, truck manufacturing, and the existing market can be found in the 2022 Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons (2022 ISOR), in Chapter I, Section D.1.[36]

Medium- and heavy-duty vocational trucks operate throughout California maintaining reliable utility service. Vocational trucks can be configured as a service body, bucket truck, box truck, passenger shuttle, or a wide range of other configurations. The body elements are manufactured by a variety of companies and assembled based on the specifications of the end user for the primary intended function of the vehicle. Thus, the number and types of vocational bodies are highly varied.

[36] CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf*, last accessed October 18, 2024).

Figure 2: Vehicle Count Configurations Reported into TRUCRS by Public Agency Utilities



Of the over 240 relevant public agency utility fleets reported in CARB's Truck Regulation Upload, Compliance and Reporting System (TRUCRS), as shown on Figure 2, the largest portion of their vehicles are listed as: service body trucks, pickup trucks, dump trucks, flatbed trucks, bucket trucks, boom trucks, vacuum trucks, and various tank trucks.[37]

1. Vocational Trucks with Power Take-Off

As shown in Figure 2, service body trucks are the most common vocational truck type reported in TRUCRS, as well as the most common truck configuration among the public agency utility fleets. These trucks are commonly used in everyday utility functions for their storage that the utility workers use to hold tools necessary to make repairs and install equipment. For utility applications, fleets also own and operate a suite of more specialized equipment which uses PTO to perform more complicated functions. For example, some service body trucks are equipped with aerial booms powered by PTO and are referred to as bucket trucks. They may also have other auxiliary attachments powered by their PTO. Bucket trucks have an aerial boom that folds or extends out with an insulated bucket at the end. The aerial boom must belong enough so the utility worker can reach equipment that is on residential distribution lines or on sides of buildings, or to trim trees. When high voltage lines need repair work, booms exceeding 150 feet are mounted on trucks with outriggers used to stabilize the vehicle while work is being performed. Generally, these types of specialized trucks that have two integrated

[37] CARB's Inventory.xls, 2025.

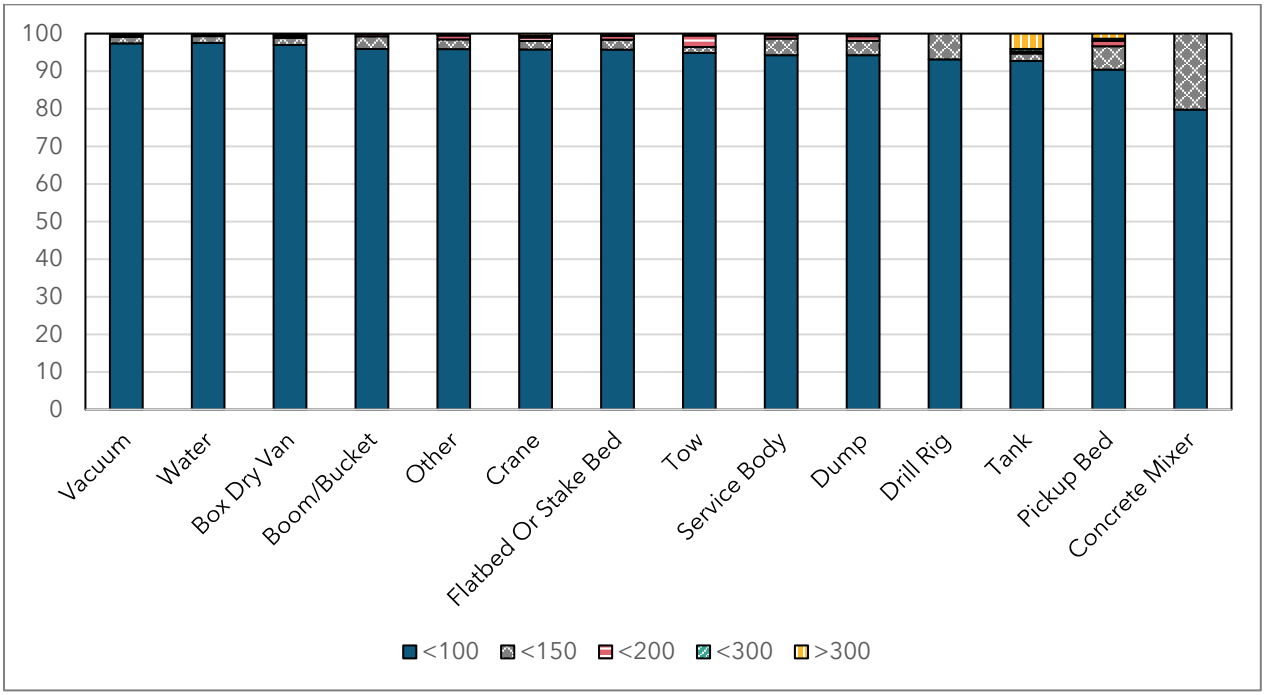
engines are excluded from the regulation. Dump trucks also have PTO and are used to move soil, gravel and loose materials to and from sites where utility workers need to dig to access underground utilities. Other common types of PTO-equipped vocational vehicles are tow trucks and dump trucks, but this classification also incorporates boom trucks, bucket trucks, concrete mixers, vacuum trucks, and more. Flatbed tow trucks utilize hydraulics to tilt the bed into a ramp and employ machine-powered winches that attach to a car and pull it onto the flatbed.

Vocational trucks with PTO are purposely built to handle a specific task or job, such as concrete mixing, dumping, pumping, towing, etc. As shown in Figure 3, vocational trucks can use a PTO to tilt the bed or for lifting workers in a bucket.

Figure 3: Vocational Trucks with PTO

As part of the ACT regulation, public agencies and private fleets were required to complete the Large Entity Reporting (LER) where they provided information on their facilities, vehicles, and how they used their vehicles. Of the public agency utility trucks surveyed in LER, 29% were identified as having PTO and 71% were identified as not having PTO. Also from LER, 73% of public agency utility fleet vehicles are regularly parked onsite at least 8 hours of the day. Figure 4 shows the percentages of daily mileage travelled broken down into bins of less than 100, 150, 200, 300 and more than 300 miles per day by vocational truck configurations from the LER survey. Note that some data was removed due to being incomplete or missing, the percentages have been normalized to 100%. In aggregate, about 81% of these vehicles drove less than 100 miles daily, 11% drove up to 150 miles daily, 3% drove up to 300 miles daily, and 5% drove up to 200 miles daily. Milage data does not reflect energy used by PTO systems or while the engine is idling.

Figure 4: Vocational Trucks Survey, percentage of Daily Mileage by Bin



H. Zero-Emission Vehicle Market

This section highlights how the ZEV market has advanced and provides an overview of the BEVs, FCEVs, and NZEVs that are readily available in the market today. A wide variety of ZEV medium- and heavy-duty trucks are available today with continued growth expected which will expand the options for utility-specialized vehicles. Both start-ups and established manufacturers have announced significant investments in new ZEV lineups. There are hundreds of commercially available battery-electric vocational trucks available now in a wide variety of weight classes and configurations. At the same time, manufacturers are making investments in FCEV technologies with demonstrations currently underway. Staff focused the analysis on BEV market availability based on the expected market outlook in the next five years since the Proposed SLG Amendments have a shorter time horizon than the entire ACF regulation. However, over time FCEVs are expected to play a larger role in the vocational truck market.

There are more than 40 truck manufacturers developing and producing medium- and heavy-duty ZEVs in California, resulting in over 250 ZEV chassis and vehicle models being produced. Table 2 shows the number of ZEV manufacturers and individual models listed by their weight class. A list of medium- and heavy-duty ZEV chassis certified for sale in California for the 2022, 2023, and 2024 model years is available on the Advanced Clean Fleets website.[38]

[38] CARB, Advanced Clean Fleets website, List of Certified Medium and Heavy-Duty ZEVs, (weblink: *https://ww2.arb.ca.gov/applications/list-certified-medium-and-heavy-duty-zevs*, last accessed December 13, 2024).

Table 2: ZEV Manufacturers & ZEV Models by Weight Class

	Class 2b - 3	Class 4	Class 5	Class 6	Class 7	Class 7 and 8 Tractor	Class 8
Number of Manufacturers	13	19	13	19	17	13	21
Number of models	38	71	39	63	60	18	68

CARB staff assessed the availability of ZEVs for a variety of common utility configurations, starting from ZEVs certified for sale in California sourced from Executive Order Certifications,[39] and conducted further research through manufacturer websites, literature, and correspondence with OEMs, dealers, and upfitters.

Table 3 below illustrates the market availability for ZEVs assessed as of May 2025. Many of these body types are used by public agency utilities. As shown, many configurations are available in a range of weight classes, and more are expected to come to market as OEMs continue to deliver products. Pickups and tractors were not evaluated as these vehicles were already widely available as ZEVs when the regulation was adopted.

Table 3: ZEV Market Availability[40]

Configuration	Class 2b	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
Bucket Truck	Y	Y	Y	N	Y	Y	Y
Boom Truck	Y	Y	Y	Y	Y	Y	Y
Dump Truck	Y	Y	Y	Y	Y	Y	Y
Flatbed Truck	Y	Y	Y	Y	Y	Y	Y
Stake Bed Truck	Y	Y	Y	Y	Y	Y	Y
Service Body Truck	Y	Y	Y	Y	Y	Y	N
Refuse Roll-off Truck	N/A	N/A	Y	Y	Y	N	Y
Tank Truck	N/A	N/A	Y	Y	N	N	N
Tow Truck	N/A	N/A	Y	Y	Y	Y	Y
Water Truck	N/A	N/A	Y	N	N	N	N
Concrete Mixer Truck	N/A	N/A	N	N	N	N	N
Concrete Pump Truck	N/A	N/A	N	N	N	N	N
Crane	N/A	N/A	Y	Y	Y	Y	N
Drill Rig	N/A	N/A	N	N	N	N	N

[39] CARB, New Vehicle and Engine Certification, (web link: *https://ww2.arb.ca.gov/our-work/programs/new-vehicle-and-engine-certification#6*, last accessed December 30, 2024).
[40] CARB, Advanced Clean Fleets website, Streamlined ZEV Purchase Exemption List, (available at *https://ww2.arb.ca.gov/applications/streamlined-zev-purchase-exemption-list*, last accessed January 10, 2025).

Configuration	Class 2b	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
Vacuum Truck	N/A	Y	Y	N	N	Y	N

*Y indicates at least one manufacturer offers a ZEV for purchase in the weight class and configuration.
**N indicates not available as ZEV/NZEV.
***N/A indicates no vehicles are sold in that configuration.

1. Battery Electric Vehicles

BEVs utilize batteries to store energy from the electrical grid to power electric motors. BEV products are available from all major OEMs in the medium and heavy-duty sector and numerous startups are solely offering BEVs. Most of the ZEV configurations available for purchase identified in Table 3 are BEVs. This demonstrates that vocational configurations are available for purchase in many weight classes and configurations identified above. As the market continues to expand and truck equipment manufacturers and upfitters design their products to work with available ZEV chassis, staff expect more variations of these configurations to become available in the future. For example, a recent partnership between Terex, Viatec, and Mack Trucks resulted in a bucket truck with a reported increase in range of up to 1.5-times more than other comparable class 6/7 bucket trucks and a 33,000 GVWR. This ePTO system provides an additional 28.8 kilowatt-hours (kWh) power source extending the trucks field use capabilities.[41,42]

2. Fuel Cell Electric Vehicles

FCEVs use hydrogen stored on-board the vehicles to generate electricity for electric motors. The range and fueling time of these vehicles are comparable to conventional ICE vehicles. For example, Accelera's ZE H2Rescue truck, a Kenworth T370 prototype designed for emergency response missions, completed an 1,806-mile journey on a single fill on October 25, 2024, which demonstrates the potential of hydrogen FCEV for ZE transportation and on-site portable power for critical emergency response and mutual aid operations.[43,44] FCEVs have demonstrated the feasibility of being integrated into regular fleet operations as they can provide similar capacity, range, and fueling capabilities as conventional vehicles.

The FCEV market is currently in its early stages as most products are in the demonstration or pre-commercial stage at this point. General Motors is collaborating on a solution for low-emissions worksites with its fleet of fuel cell electric powered medium duty trucks through a

[41] Terex Utilities, Terex Utilities Announces New Zero-Emissions Bucket Truck with More Range and Payload Capacity, February 26, 2025, (weblink: *https://www.terex.com/utilities/en/about/news/terex-utilities-announces-new-zero-emissions-bucket-truck-with-more-range-and-payload-capacity*, last accessed February 28, 2025).
[42] Vertikal, Terex's new all electric bucket truck, February 27, 2025, (weblink: *https://vertikal.net/en/news/story/45620/terex039s-new-all-electric-bucket-truck*, last accessed February 28, 2025).
[43] Department of Homeland Security, Hydrogen Fuel Cell-Powered Emergency Relief Truck Prototype Fact Sheet, August 2023, (web link: *https://www.dhs.gov/sites/default/files/2024-05/23_1102_st_CIR_H2Rescue_Fact%20Sheet_20230929_rev_0520.pdf*, last accessed November 4, 2024).
[44] Fuel Cells Works, Accelera Sets Guinness World Record for Longest Journey by Hydrogen-Powered Truck, October 31, 2024, (web link: *https://fuelcellsworks.com/2024/10/31/fuel-cells/accelera-sets-guinness-world-record-for-longest-journey-by-hydrogen-powered-truck*, last accessed November 1, 2024).

pilot program funded by the Department of Energy.[45] Volvo Construction Equipment has begun to test the world's first hydrogen-fuel-cell-powered articulated hauler.[46] While these commercially focused FCEVs are not yet widely available, staff anticipate that more specialty FCEVs will become commercially available in the upcoming years as the technology expands into tractor-trailers, which may then expand into other vehicle categories, including traditional utility-specialized vehicles.

3. Near-Zero-Emission Vehicles

NZEVs are defined in the ACF regulation as vehicles capable of operating as a ZEV for a certain number of miles as established in Title 13, CCR section 1963(c)(16). Essentially, these vehicles are PHEVs powered by both an internal combustion engine and a battery-electric powertrain that are capable of operating like a ZEV for a limited number of miles. NZEVs are considered a bridging technology, which assists in the development of the full ZEV market as they have the same electric drivetrain components.

Ford has announced plans to release numerous PHEV products including a Super Duty pickup as early as 2027.[47] Recent ACT regulation comment letters suggest numerous manufacturers are evaluating certification of NZEVs which may lead to future products.[48,49,50] While these products are not yet commercially available, technology is developing and will greatly increase the options available to public agency utilities. This will improve operational flexibility and smooth out compliance as fleets are better able to purchase vehicles which best fit their needs.

4. Electric Power Take-Off

To eliminate unnecessary idling for conventional trucks with PTO operations, an ePTO can be used to more efficiently provide power to on-board equipment. Altec, Odyne, and Viatec are some local distributers of ePTO systems who offer their product through California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) catalog.[51] An ePTO

---

[45] General Motors, GM Fuel Cell Pilot Program Extends Beyond Hydrogen Trucks to Create Blueprint for Low-Emissions Worksites, March 2024, (web link: *GM Fuel Cell Pilot Program Extends Beyond Hydrogen Trucks 8-23-24.pdf*, last accessed August 23, 2024).

[46] Electrek, Lewis, Michelle, Volvo tests the world's first hydrogen-fueled articulated hauler, June 17, 2022, (Web link: *https://electrek.co/2022/06/17/volvo-tests-the-worlds-first-hydrogen-fueled-articulated-hauler*, last accessed June 6, 2025).

[47] Bloomberg. February 4, 2025. Inside Ford's Money-Guzzling EV Crisis. (web link: *https://www.bloomberg.com/news/features/2025-02-04/tariffs-deal-ford-another-ev-blow-after-f-150-lightning-falls-behind-cybertruck*, last accessed May 28, 2025).

[48] Ford. October 22, 2024. Ford Comments on the Proposed Amendments to the Advanced Clean Trucks (ACT) Regulation and the Zero-Emission Powertrain Certification Test Procedure on (web link: *https://www.arb.ca.gov/lists/com-attach/67-actzepcert2024-UzUCa1YlAzQBWAdk.pdf*, last accessed May 27, 2025).

[49] Stellantis. October 22, 2024. Stellantis' Comments to CARB's Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure (web link: *https://www.arb.ca.gov/lists/com-attach/56-actzepcert2024-B3RXJQFIWGcHbQVk.pdf*, last accessed on May 27, 2025).

[50] Alliance for Automotive Innovation. October 22, 2024. Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure (web link: *https://www.arb.ca.gov/lists/com-attach/54-actzepcert2024-VzQFbABsUG5WNQNt.pdf*, last accessed May 28, 2025).

[51] California HVIP, HVIP Catalog, (weblink: *https://californiahvip.org/vehiclecatalog/*, last accessed December 11, 2024).

system is an add-on technology that commonly consists of a hydraulic pump, an electric motor, and an inverter connected to a rechargeable power source such as a battery or hydrogen fuel cell electric.[52] If the power source for the ePTO is a battery, it is often sized large enough to hold enough capacity for the truck to complete a full day's work without needing to be recharged and is capable of being recharged using a Level 1 or 2 charger. ePTO systems can continue to work while the vehicle's propulsion system is disengaged (transmission is in park mode) by drawing power using an inverter connected directly to the vehicle's ICE if needed. This design allows for continuous operation of the ePTO so long as the ICE engine has fuel. An ePTO can also power auxiliary equipment and the vehicle's heating ventilation and air condition system while the engine is off which can further reduce ICE idling. Hours spent idling can be reduced without compromising a traditional utility-specialized vehicle's ability to work around-the-clock because ePTO systems can switch to using the ICE as a generator to power the ePTO. Some ePTO systems are redundant and switch to the legacy PTO system when the battery is depleted.[53]

A 2020 National Renewable Energy Laboratory study found that vehicle NOx emissions are at their highest rate during conventional PTO use because, while at idle, an ICE has low exhaust temperatures and low NOx conversion efficiency through the selective catalytic reduction emissions aftertreatment system. When the engine is abruptly engaged in very transient time segments for PTO operation, NOx spikes cannot be mitigated by the selective catalytic reduction (SCR) which results in high NOx exhaust emission spikes.[54] CARB's Heavy-Duty Omnibus regulation requires new and subsequent model year engines to be certified to a Low Load Cycle which is designed to measure emissions during low load engine operations, including idling. Because of the new requirements to take measurements during the Low Load Cycle, NOx emissions during idling are expected to decrease from the sale of new ICE vehicles. However, NOx emissions during the ramp up to high load that happens when PTO becomes engaged, will still be elevated.

An effective anti-idle mitigation measure might be an integrated ePTO system with automated controls that modulate the ICE on or off as needed to run the ePTO when the transmission is put in park. Some systems require the operator to turn off the engine to engage the ePTO. This outcome is not always achieved in practice since traditional PTO requires an engine-on mode and operators have become accustomed to this. An integrated ePTO system installed on a traditional utility-specialized vehicle that automatically engages when the vehicle's transmission is put into park ensures NOx and GHG emissions are eliminated if the ePTO system is engaged in engine off mode. Viatec claims GHG reductions of 21 metric tons of carbon dioxide ($MTCO_2$) per year from one ePTO installed to reduce job site idling.[55] Altec states that job site idling accounts for 70 to 85% of an average workday for utility trucks and

[52] PowerMag, Hickey, Tom, How ePTOs Are Reducing Bucket Truck Costs, Noise, and Emissions, October 17, 2023, (website: *How ePTOs Are Reducing Bucket Truck Costs, Noise, and Emissions (powermag.com)*, last accessed October 2024).
[53] Viatec, SmartPTO Specifications Sheet, September 20, 2023, (weblink: September 20, 2023, *https://www.viatec.us/specifications_smartpto_9-20-23/,* last accessed October 31, 2024).
[54] National Renewable Energy Laboratory, NREL/TP-5400-5782 Investigation of Emissions Impacts from Hybrid Powertrains, January 2020, (weblink: *https://www.nrel.gov/docs/fy20osti/75782.pdf*, last accessed November 4, 2024).
[55] Viatec, Viatec SmartPTO Information Packet for CARB.pdf, November 26, 2024.

results in double the emissions versus driving.[56] Lastly, Odyne claims that job site and idle electrification reduces full-day carbon dioxide (CO_2) by approximately 50% and reduces full day NOx by approximately 90% for traditional utility vehicle duty cycles with PTO.[57]

It is worth noting that Odyne's ePTO design can recharge by drawing energy from the powertrain when the truck is in motion using traction energy from braking.[58] This allows Odyne's system to be eligible for federal tax incentives,[59] but also means the emissions aftertreatment system could be impacted and testing is needed to ensure emission standards can be met. As such, CARB requires any hybrid system, like Odyne's, to receive an Alternative Fuel Retrofit Systems Certification to be sold in California. This ensures the manufacturer has demonstrated compliance with the emission, warranty, and durability requirements established in the test procedure prior to operation on California's roads.

a. Electric Power Take-Off Total Cost of Ownership

This example is provided for illustrative purposes only. Fuel cost savings from utilizing ePTO can be quantified by a fleet manager using only a few inputs. Class 8 utility bucket trucks with PTO engaged consume about 1.5 gallons of diesel per hour while idling.[60] Class 5 bucket trucks consume about 1 gallon of gasoline per hour while idling with PTO engaged.[61] For a Class 5 bucket truck, the incremental cost of purchasing a more expensive ePTO with an 8.8 kWh battery capacity and electric vehicle supply equipment (EVSE) is $22,910, and the payback period is 4 years assuming 4.5 hours of stationary operation per day. For a larger Class 8 bucket truck the incremental cost of purchasing a more expensive ePTO with a battery capacity of 35 kWh and EVSE is $79,519 and the payback period is less than 10 years. HVIP voucher amount was used as a surrogate for the incremental cost to purchase and install an ePTO when compared to a PTO system. The HVIP voucher amount includes the cost to install

---

[56] Altec, Usage Exemption Meeting PowerPoint presentation, November 21,2024, Altec-CARB Final 11-21-24jjb.pdf (also available for download from, *https://ww2.arb.ca.gov/system/files/webform/public_comments/19706/Altec%20Informal%20CARB%20response_123124.pdf*, last accessed February 2, 2024).

[57] Odyne, Letter to CARB on Practical and Near Zero-emissions Solution for PAUs Granted ZEV Purchase or Daily Usage Exemption for their Traditional Utility-Specialized Vehicle, October 24, 2024, (web link: *https://ww2.arb.ca.gov/system/files/webform/public_comments/19016/Odyne_AB1594PolicyRecomm_20241024.pdf*, last accessed February 2, 2025).

[58] California Energy Commission, Clean Transportation Program, FINAL PROJECT REPORT Plug-In Hybrid Medium Duty Truck Demonstration and Evaluation Plug-In Hybrid Medium-Duty Truck Demonstration and Evaluation, Page 10. (web link: *https://www.energy.ca.gov/publications/2020/plug-hybrid-medium-duty-truck-demonstration-and-evaluation*, last accessed February 2, 2025).

[59] CalStart, Fact Sheet on 45W: Qualified Commercial Clean Vehicle Credit, (web link: *https://calstart.org/wp-content/uploads/2024/02/45W-Qualified-Commercial-Clean-Vehicle-Credit.pdf*, last accessed November 22, 2024).

[60] Lascurain, M.B.; Franzese, O.; Capps, G.; et al. (2012). Medium Truck Duty Cycle Data from Real-World Driving Environments: Project Final Report (ORNL/TM-2012/240). Work performed by Oak Ridge National Laboratory for the U.S. DOE (web link: *https://info.ornl.gov/sites/publications/files/Pub39145.pdf*, last accessed October 14, 2024).

[61] National Renewable Energy Laboratory Project Draft Final Report for the Period August 1, 2012, through March 31, 2014, "Data Collection, Testing and Analysis of Hybrid Electric Trucks and Buses Operating in California Fleets." ARB Agreement Number 11-600, NREL Contract Number FIA-12-1763, April 15, 2014. (web link: *https://www.nrel.gov/docs/fy15osti/62009.pdf*, last accessed on October 15, 2024).

the ePTO.[62] Although no other costs were considered for this analysis, maintenance cost savings can be quantified by a fleet manager by using this Idling Reduction Savings Calculator.[63] This analysis is conservative because it does not include the cost savings from reduced maintenance from less engine idling. Altec calculated a more favorable TCO ranging from 2.3 to 3.4 years for two of their products, which include cost savings from reduced maintenance with reduced idling ranging from 3.9 to 6.4 hours per workday.[64]

5. Electric Vehicle Infrastructure

Background information on ZEV infrastructure can be found in the ACF ISOR, Chapter I, Section G.[65] Public agency utilities are assumed to primarily utilize depot charging. However, during emergencies, public agency utility fleets may need to charge in the field. One near-term concern raised by public agency utilities is the time required to charge BEVs in the field, since even with available mobile charging solutions, the downtime to charge can be a barrier when looking to replace traditional utility-specialized vehicles with a high utilization rate.

To power EVSE during infrequent emergency solutions, DC fast charging needs can be met using portable power solutions, such as generators, which may already be deployed for emergency operations. Infrequently deployed, portable power solutions can support a fleet's BEV deployment which lowers overall emissions compared to deploying new ICE vehicles. Such portable power solutions currently exist and are readily available which can meet a growing portion of fleet's needs for extended BEV deployments. EVESCO/Power Sonic's DC fast chargers enable fleet operators to turn any three-phase outlet into a DC fast charging station, providing output power up to 120kW.[66] Lightning eMotors DC fast-charging units range from 105kWh up to 420kWh of battery capacity, with the ability to charge up to five vehicles at a time.[67] Kempower also offers a portable DC charger, with up to 50kW power range and the ability to charge up to two vehicles at once.[68] Volvo recently released a mobile battery energy storage system (BESS) that features an integrated EV charger, power conversion system, switchgear and transformer. When used in off-grid scenarios, the BESS is charged in advance, then can be transported to remote locations where it provides mobile energy without needing a direct grid connection. Volvo's product testing claims their mobile BESS has enough capacity

---

[62] Implementation Manual for the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). October 31, 2024 (weblink: *https://californiahvip.org/wp-content/uploads/2024/10/FY23-24-HVIP-Implementation-Manual-103124.pdf*, last accessed May 23, 2025).
[63] Argonne, Idling Reduction Savings Calculator, (web link: *https://www.anl.gov/sites/www/files/2018-02/idling_worksheet.pdf*, last accessed October 15, 2024).
[64] Altec, Usage Exemption Meeting PowerPoint presentation, (web link: *Altec-CARB Final 11-21-24jjb.pdf,* downloaded on January 28, 2025).
[65] CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement Reasons, August 30, 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf*, last accessed October 18, 2024).
[66] EVESCO Electric Vehicle Energy Storage Company, Power Sonic, DC Mobile Charging Stations (weblink: *https://www.power-sonic.com/product/eves-120120/*, last accessed April 30, 2025).
[67] Electrek, Lightning eMotor unveils 2nd generation portable DC fast charger, July 21, 2022, (weblink: *https://electrek.co/2022/07/21/lightning-emotors-portable-dc-fast-charger/*, last accessed April 30, 2025).
[68] Kempower America, Kempower Movable Charger, (weblink: *https://kempower.com/america/solution/kempower-movable-charger/*, last accessed April 30, 2025).

to charge up to three electric heavy-duty trucks on one full charge in island mode, at speeds up to 1.5 hours per charge.[69]

III. The Problem that the Proposed Amendments are Intended to Address

A. Assembly Bill 1594

The proposed SLG amendments would implement the changes directed by AB1594. When enacting AB1594, the legislature found that public agency utility vehicles as essential to maintaining reliable water and electric service, achieving the state's ambitious energy and water goals, responding to disasters in an emergency capacity, and providing mutual aid assistance in the state and nationwide. The legislature enacted AB1594 to require CARB to make appropriate changes to ACF regulation which allow zero-emission procurement plans to be reasonably tailored to support each public agency utility's ability to respond to major disruption events, including, but not limited to, severe weather, wildfires, natural disaster, and physical attacks, and to maintain reliable utility services to California communities.

The sponsors of AB1594 expressed concerns that the ACF regulation may, in some circumstances, impact utilities' ability to provide necessary services to the communities they serve, despite the accommodations and exemptions described in Chapter 1. Several of the exemptions provided to fleets under the ACF regulation are only available when replacing a vehicle. When the regulation was initially adopted, the ZEV Milestones Option did not use a minimum age criteria for fleets concerned about receiving extensions when replacing vehicles early; however, a minimum age criteria was included for certain exemptions for fleets using the ZEV Purchase Schedule. Establishing qualifying age criteria was necessary to ensure that exemptions were not requested prematurely within the normal useful life of an ICE vehicle. This "minimum replacement age" guardrail reduces the likelihood that a fleet owner might accelerate a purchasing decision for a vehicle because it is unavailable as a ZEV. CARB staff used the useful life definition from Senate Bill 1 (Beall, Stats. 2017, ch. 5) as the minimum age qualifying criteria to access the exemptions. SB 1 specifies a vehicle "useful life" as the later of either (a) 13 years from the model year that the engine and emissions control systems are first certified or (b) when the vehicle travels 800,000 miles or 18 years from the model year that the engine and emissions control systems are first certified, for use, whichever is earlier.[70] Sponsors of AB1594 claim that traditional utility-specialized vehicles used are often retired sooner than 13 years. Another accommodation for public agency utilities in the ACF regulation is the Daily Usage Exemption that provides flexibility if a BEV cannot meet the fleet's usage

[69] PV Magazine, Marija Maisch, Volvo launches battery energy storage system with integrated EV charger, April 7, 2025, (weblink: *https://www.pv-magazine.com/2025/04/07/volvo-launches-battery-energy-storage-system-with-integrated-ev-charger/*, last accessed April 10, 2025).

[70] CARB, Page 70 of Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response, 2022, (weblink: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffsor.pdf*, last accessed December 24, 2024).

needs. The sponsors of AB1594 state that the specific calculations required by CARB to claim the Daily Usage Exemption do not align with their use cases.[71]

B. Proposed Repeal of Portions of the Advanced Clean Fleets Regulation

On June 12, 2024, President Trump signed into law House Joint Resolutions 87, 88, and 89 providing congressional disapproval of U.S. EPA's waivers of preemption for California's Advanced Clean Cars II, Advanced Clean Trucks, and Heavy Duty Omnibus programs.[72] California profoundly disagrees with these unlawful resolutions under the guise of the Congressional Review Act (CRA) as unconstitutional and contrary to the text of the CRA as recognized by the nonpartisan U.S. Government Accountability Office and the Senate Parliamentarian. California is leading a coalition of 10 states challenging the unprecedented and unlawful use of the CRA to upend California's clean vehicles programs. The complaint asks the court to declare the resolutions to be unlawful and to require the Federal Administration to implement the Clean Air Act consistent with the granted waivers.[73] U.S. EPA did not take action on CARB's request for a waiver and authorization for the ACF regulation by January 2025, and the incoming federal administration would likely not approve CARB's request. In light of those considerations, CARB reasonably determined that the preferred alternative would be to withdraw its request so that it could consider approaches that would preserve its emissions benefits and provide clarity to the regulated community.

CARB is accordingly proposing to repeal the elements of the ACF regulation applicable to High-Priority, Federal, and Drayage fleets, as those elements were described in CARB's request for waiver and authorization action. Repealing those elements subsequent to CARB's withdrawal of its waiver and authorization request provides greater certainty to entities that they are not required to demonstrate compliance with those requirements. There are no impacts on costs or emissions due to the Proposed Repeal, more details are provided in the Economic Impact Statement. The state and local government fleets portion of the ACF Regulation remains unaffected.

C. Low Carbon Fuel Standard

During the 2018 LCFS rulemaking, the Board adopted the HRI and FCI provisions. These two crediting opportunities were designed to incentivize zero-emission light-duty vehicle (LDV) refueling infrastructure ahead of anticipated ZEV demand. The intent of these provisions was to help remove the "chicken-and-egg" issue of vehicle demand waiting on refueling development, and refueling infrastructure waiting on vehicle demand, by incentivizing rapid buildout of public refueling infrastructure. Dispensed fuel receives crediting in the LCFS, and these provisions added crediting for unused capacity at approved stations. The provisions

---

[71] Senate Committee on Transportation, Chinn. R., Medium- and heavy-duty zero-emission vehicles: public agency utilities, July 7, 2024, (web link: *https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202320240AB1594#*, last accessed October 22, 2024).

[72] White House. June 12, 2025. Congressional Bills H.J. Res. 87, H.J. Res. 88, H.J. Res. 89 Signed into Law (web link: *https://www.whitehouse.gov/briefings-statements/2025/06/congressional-bills-h-j-res-87-h-j-res-88-h-j-res-89-signed-into-law/*, last accessed June 17, 2025).

[73] Office of Attorney General. June 12, 2025. California Will Not Waver in Defending Itself from Federal Overreach: Attorney General Bonta Sues Trump Administration for Attack on California's Clean Vehicles Program (web link: *https://oag.ca.gov/news/press-releases/california-will-not-waver-defending-itself-federal-overreach-attorney-general*, last accessed June 17, 2025).

have supported the buildout of dozens of hydrogen stations and thousands of fast chargers in California and play a key role in supporting the overall transition to ZEV technology, driven in large part by the ACC II regulation.

For the 2024 rulemaking, the Board adopted provisions to expand the current ZEV infrastructure crediting provisions by adding crediting for medium-duty infrastructure and extending the LDV crediting.

Staff are proposing to modify the derating factors for light-and-medium-duty hydrogen refueling infrastructure (LMD-HRI) crediting within the Low Carbon Fuel Standard (LCFS) regulation. Staff proposes to reduce the derating factor, such that LMD-HRI stations may receive HRI credits for the full nameplate capacity (up to 1200 kilograms per day) for public stations, and 50% of the nameplate capacity for private stations. These changes will provide stronger crediting support for hydrogen stations and more adequately support development of stations that can accommodate the refueling demand of larger medium-duty hydrogen fuel cell electric vehicles.

IV. The Specific Purpose and Rationale of Each Adoption, Amendment, or Repeal

This chapter lists the purpose and rationale for each new addition, move, deletion, or change made to the SLG provisions of the ACF regulation as they were approved by OAL, effective October 1, 2023, as well as the proposed amendments to the Low Carbon Fuel Standard regulation, section 95486.3(a). The regulatory text also includes Section 100 non-discretionary amendments approved by OAL on August 26, 2024. These are not shown as changes. CARB's Section 100 changes directed by AB1594 include a new definition of "public agency utility" as it already existed in statute and allow a public agency utility to include the three highest daily mileage readings of traditional utility-specialized vehicles recorded within a period of at least 30 consecutive workdays in their reports needed to support their requests for a Daily Usage Exemption. The purpose and rationale for the Proposed Repeal is to give California Drayage, High Priority and Federal fleets more certainty and make room for CARB to develop other new efforts to reduce medium- to heavy-duty vehicle emissions in California

D. Non-substantive Changes

The following sections do not include all modifications to correct typographical or grammatical errors, changes in numbering or formatting, nor does it include all of the non-substantial revisions made to improve clarity. Many of these non-substantive changes to numbering, formatting, and clarity revisions are due to the repeal of sections 2015 through 2015.6 and

associated copy of the ZEV Milestones Option and related provisions into this article. The original ACF rulemaking purpose and rationale can be referenced in the 2022 ISOR.[74,75,76]

E. Title 13, Section 2014 through 2014.3. Drayage Truck Requirements.

Purpose

The purpose of this change is to repeal the Drayage Truck Requirements.

Rationale

Repealing those elements subsequent to CARB's withdrawal of its waiver and authorization request provides greater certainty to entities that they are not required to demonstrate compliance with those requirements. The proposed repeal will allow CARB to refocus its efforts to achieve emission reductions in this sector in light of U.S. EPA's lack of final action and allow CARB to consider approaches that would better ensure its ability to retain elements of the ACF regulation and accordingly better preserve its emissions benefits.

F. Title 13, Section 2015 through 2015.6. High Priority and Federal Fleets Requirements.

Purpose

The purpose of this change is to repeal the High Priority and Federal Fleets Requirements.

Rationale

Repealing those elements subsequent to CARB's withdrawal of its waiver and authorization request provides greater certainty to entities that they are not required to demonstrate compliance with those requirements. The proposed repeal will allow CARB to refocus its efforts to achieve emission reductions in this sector in light of U.S. EPA's lack of final action and allow CARB to consider approaches that would better ensure its ability to retain elements of the ACF regulation and accordingly better preserve its emissions benefits.

G. Title 13, Section 2013. State and Local Government Fleet Applicability, Definitions, and General Requirements.

1. Section 2013(a)(1). Fleet Applicability

Purpose

The purpose of the changes is to replace the term "as provided in the exemptions" with "for excluded vehicles as", to remove reference to section 2013(e), and to delete "as described in

---

[74] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[75] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[76] CARB, August 4, 2023, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

the vehicle scope specified in section 2013(a)(2)", and to delete "subject to title 13, California Code of Regulations (CCR), section 2015."

Rationale

These changes are necessary to remove the reference to the portion of the ACF regulation which is being repealed. It does not alter the regulation's requirements as federal fleets are not included in the definition of state or local government agency.

The modification from "as provided in the exemptions" to "for excluded vehicles as" is necessary to distinguish between vehicles that are completely excluded from the regulation and those that remain subject to the regulation but may receive exemptions from the ZEV purchase requirements to purchase ICE vehicles.

The removal of 2013(e) is necessary to conform with the repeal of section 2015 through 2015.6 and changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

The removal of "as described in the vehicle scope specified in section 2013(a)(2)" is necessary to correct an erroneous repetition of reference to the vehicle scope section.

2. Section 2013(a)(2). Vehicle Scope

Purpose

The purpose of this change is to modify "as provided in the exemptions" to "for excluded vehicles".

Rationale

This change is necessary to distinguish vehicles that are completely excluded from the regulation and those that remain subject to the regulation but may receive exemptions from the ZEV purchase requirements.

3. Section 2013(a)(3). Hiring Entities

Purpose

The purpose of this change is to move this language to new section 2013.7.

Rationale

These changes are necessary to position all requirements specific to hiring entity applicability and associated requirements for hiring compliant fleets in the same section to improve readability and organization.

4. Section 2013(b). "Dispatch"

Purpose

The purpose of the change to the definition of "dispatch" is to add the word "specific" in front of "vehicle" to ensure that the definition only applies to dispatching a specific vehicle rather than generally providing direction or instructions about completing a task that requires the use of vehicles in a fleet.

Rationale

This change to the definition of "dispatch" is necessary to establish that the definition applies only when a fleet owner is providing direction or instructions for routing a specific vehicle and

not when providing general instructions to the hired entity, such as a contract that specifies the areas to service by a garbage truck fleet or a contract that specifies when and where road repair activities need to be made.

5. Section 2013(b). “ePTO"

Purpose

The purpose of the change is to add the definition for an “ePTO” to mean an integrated vehicle technology system capable of providing power to auxiliary equipment or accessories, such as hydraulic pumps, compressors, liquid pumps, or winches, which enables the vehicle (and integrated system) to produce no criteria pollutant, or precursor pollutant, or greenhouse gas exhaust emissions while the auxiliary equipment or accessories are being operated.

Rationale

It is necessary to define the term “ePTO” that is aligned with common industry terminology since the requirement to bid on ePTO is now proposed to be included in the criteria for early access to the exemptions. This definition is intended to cover the multiple types of ePTOs systems that exist now as well as emerging ZE technologies that function like a conventional PTO with energy stored on-board the vehicle.

6. Section 2013(b). “Near zero-emissions vehicle” or “NZEV”

Purpose

The purpose of the changes in this section is to make the definition of “near zero-emissions vehicle” the same as in title 13, CCR section 1963(c), and to modify the “all-electric range” portion of the definition to point to title 13, CCR, section 1963.2(b)(2) instead of defining it according to the test procedure that provides instruction for testing all-electric range.

Rationale

This change aligns the definition of "near zero-emissions vehicles” with the definition in title 13, CCR section 1963(c) and aligns “all-electric range” with the definition in title 13, CCR, section 1963.2(b)(2) to ensure consistency across CARB regulations and improve readability.

7. Section 2013(b). “Power take-off” or “PTO"

Purpose

The purpose of the change in this section is to add a definition for “PTO” to mean a mechanical component on a vehicle that transfers power from an engine to auxiliary equipment or accessories, such as hydraulic pumps, compressors, liquid pumps, generators, or winches without requiring a separate power source.

Rationale

It is necessary to define the term “PTO” that is aligned with common industry terminology since it is used as criteria to define a “traditional utility-specialized vehicle”. PTOs are mounted on the drivetrain of the vehicle; the most common type is integrated to the transmission gears or countershaft. Another type is referred to as “live PTO” which is used to provide continuous power for operations such as refrigeration or a cement mixer and mounts directly on an engine’s flywheel. The most common uses for a PTO are to direct engine rotary power to auxiliary equipment such as hydraulic pumps, liquid pumps, and air compressors. PTOs vary

in size and torque capabilities due to the varying power demand from auxiliary devices that do work.

8. Section 2013(b). "Traditional utility-specialized vehicle"

Purpose

The purpose of the changes in this section is to add a definition of a traditional utility-specialized vehicle to mean “an ICE vehicle owned and operated by a public agency utility that meets all the following criteria”. New subsections (A) through (E) were added as described below.

A new subsection (A) is added to specify a traditional utility-specialized vehicle “has a GVWR greater than 10,000 lbs.”

A new subsection (B) is added to specify a traditional utility-specialized vehicle “has a body configuration that is not designed to primarily carry cargo or passengers.”

A new subsection (C) is added to specify a traditional utility-specialized vehicle “has maximum limits for tongue weight, axle loading, and a gross combination weight rating.”

A new subsection (D) is added to specify a traditional utility-specialized vehicle “is operated greater than 50 percent of the time to maintain reliable public utility services as defined in Section 224.3 of the PUC, Section 116275 of the HSC, Section 20200 of the Water Code, and Section 116773.2 of the HSC.”

A new subsection (E) is added to specify a traditional utility-specialized vehicle is either equipped with a power take-off device or is equipped with four-wheel drive or six-wheel drive capable of providing torque and power to all wheels simultaneously.

Rationale

This change is necessary to define a class of vehicles for which Public Agency Utility fleets may apply for early access to the ZEV Purchase Exemption and Daily Usage Exemption, and access to additional flexibility in the Daily Usage Exemption as required by AB 1594.

The requirement that the vehicle be an ICE vehicle is necessary because ZEVs or NZEVs already meet the regulation’s requirements and therefore would not need additional flexibility in accessing exemptions.

The additions specifying such vehicles are owned and operated by a public agency utility and meet all criteria in subsections (A) through (E) is necessary to limit the definition of traditional utility-specialized vehicles to those vehicles that primarily perform work necessary to install, maintain, and repair public water, sewer, and power utilities, in alignment with the spirit and text of AB 1594. Examples of traditional utility-specialized vehicle configurations include vehicles commonly known as: digger derricks, bucket trucks, underground cable pullers, overhead cable pullers, cranes, aerial booms, water tanker trucks, dump trucks, line clearance tree trimming trucks with a bucket arm, insulator washers, grapple loaders, hydro excavators, mobile water purification trucks, and all-wheel drive versions of any configuration.

The addition of subsection (A) is necessary to specify that only vehicles greater than 10,000 lbs. GVWR can qualify as traditional utility-specialized vehicles. Vehicles less than or equal to 10,000 lb. GVWR, such as those in Class 2b or Class 3, include common vehicles like pickups, small box trucks and vans that are already readily available in ZEV configurations that can refuel at stations suitable for light duty vehicles.

The addition of subsection (B) is necessary because carrying cargo and passengers is incidental to the work performed by utility-specialized vehicles. Additionally, equipment to do work at a job site is not cargo. Cargo includes goods transported from one place to another. This criteria is necessary to differentiate specialized-utility vehicles from common vehicles like buses, vans and box trucks whose primary intended function is to carry cargo or passengers.

The addition of subsection (C) is necessary to ensure that only those vehicles that have maximum limits for tongue weight, axle loading, and a gross combination weight rating as determined by the vehicle or chassis OEM can qualify as a traditional utility-specialized vehicle.

The addition of subsection (D) is necessary to ensure that owners or operators of public agency utility fleets that are controlled by a larger public entity such as a city or municipality would not claim all of their city's vehicles under the early access provisions of AB 1594 intended for traditional utility-specialized vehicles when the city vehicles are primarily used to support other functions than utility maintenance and repair activities. For example, a city manager with multiple departments could only claim traditional-utility specialized vehicles in their water and power department operating under Section 224.3 of the Public Utilities Code, and not their general maintenance vehicles used by the public works department for road maintenance even though some of the vehicles may be identical. These criteria are necessary to guard against situations where a larger entity that does not meet the statutory definition of a public agency utility attempts to claim more traditional utility-specialized vehicles under the early access provisions of AB 1594 than would otherwise qualify under their public agency utility subdivision or subsidiary statutory authority or its equivalent.

The addition of subsection (E) is necessary to further specify that the vehicle must be specialized by having either a PTO device or four / six-wheel drive equipped. PTO is a primary requirement for many traditional utility-specialized vehicles to function. Similarly, vehicles that are equipped with four or six-wheel drive are necessary to install, maintain, and repair public water, sewer, and power utilities to reach utilities located in areas away from any paved roads.

9. Section 2013(b). "TRUCRS"

Purpose

The purpose of this change is to define the acronym "TRUCRS" as the Truck Regulations Upload, Compliance, and Reporting System.

Rationale

This change is necessary to define the acronym "TRUCRS" which now appears throughout the regulation language as it has become the reporting system to be used by fleet owners to report vehicle information to meet reporting requirements.

10. Sections 2013(c). Excluded Vehicles.

Purpose

The purpose of the change in this section is to rename the section heading from "Exemptions" to "Excluded Vehicles" and to change the word "exempt" to "excluded". In addition, a change was made to the reference to specify that the exclusions apply through section 2013.6.

Rationale

The heading change is necessary to distinguish vehicles that are completely excluded from the regulation and those that remain subject to the regulation but qualify for an exemption from some of the requirements while remaining subject to other aspects of the regulation. The numbering change from 2013.4 to 2013.6 is necessary to include the added subsection to make it clear that vehicles that are excluded from the regulation are also excluded from the ZEV Fleet Milestones Option that is being copied from section 2015.3 into section 2013.6.

11. Sections 2013(c)(10). Excluded Vehicles.

Purpose

The purpose of this change is to specify the exclusion for zero-emission airport shuttles applies generally to the regulation except as specified in section 2013.6(a)(1), which has additional criteria for when the exclusion does not apply.

Rationale

This change is necessary to maintain consistency with the ZEV Milestones Option to inform fleet owners that may also have shuttles subject to the Zero-Emission Airport Shuttle regulation to section 2013.6(a)(1) that compliance will include the airport shuttles. Airport shuttles will be required to have more ZEVs than the ZEV Milestones option requires and will provide more flexibility to any fleet owner affected by both regulations. Any affected fleets that have airport shuttle buses are already reporting in TRUCRS.

12. Sections 2013(c)(11). Excluded Vehicles.

Purpose

The purpose of this change is to add subsection 2013(c)(11) regarding cargo handling equipment that are subject to title 13, CCR, section 2479 to the list of vehicles that are excluded from the ACF Regulation.

Rationale

This change is necessary to specify that any on-road vehicles that are subject to the Mobile Cargo Handling Equipment Regulation are excluded from this regulation to keep the regulations separate. Cargo handling regulation generally applies to equipment that operate at California’s seaports and intermodal railyards and remain on site such as yard trucks (hostlers), rubber-tired gantry cranes, container handlers, forklifts, and other types of vehicles that.

4. Section 2013(d) Through 2013(d)(2). General Requirements.

Purpose

The purpose of these changes is to move subsections (1) and (2) to section 2013.1(a)(1) and (2) and to make conforming changes to section number references. The purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[77,78,79]

Rationale

These changes are necessary to position all requirements specific to the ZEV Purchase Schedule default compliance path for SLG fleets in the same section to improve readability and organization and to prevent conflicting requirements or unintended flexibilities due to copying the ZEV Milestones Option into section 2013.6. Changes to numbering and section references are necessary to conform with the changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

13. Section 2013(e). ZEV Milestones Option Flexibility.

Purpose

The purpose of the changes in this section is to make conforming changes to section numbering references and remove reference to the federal government fleet requirements specified in section 2015 that is being repealed as part of the proposed changes.

Rationale

Changes to numbering and section references are necessary to conform with the proposed repeal of section 2015 through 2015.6 and changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

---

[77] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-1: Purpose and Rationale for State and Local Government Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph1.pdf*, last accessed May 16, 2025).
[78] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[79] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

14. Section 2013(g) through 2013(i).

Purpose

The purpose of this change is to move these sections; 2013(g), 2013(h), and 2013(i) to the ZEV Purchase Schedule section 2013.1. The purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[80,81,82]

Rationale

These changes are necessary to position all requirements specific to the ZEV Purchase Schedule for SLG fleets in the same section to improve readability and organization and prevent conflicting requirements or unintended flexibilities due to copying the ZEV Milestones Option into section 2013.6. Changes to numbering and section references are necessary to conform with the changes to the ZEV Purchase Schedule and ZEV Milestones Option requirements.

15. Section 2013(g). Joint Compliance Option.

Purpose

The purpose of the changes in this section are to make conforming changes to section numbering references and add language specifying the individual compliance requirement is "dependent on whether the fleet owner elects to comply with section 2013.6."

Rationale

These changes are necessary to conform with the changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

16. Section 2013(i). Vehicles Acquired with Incentive Funds.

Purpose

The purpose of this change is to specify that the funding provision language applies to both the newly moved requirements for fleets following the ZEV Purchase Schedule or the newly copied ZEV Milestones Option.

Rationale

Changes to section references are necessary to conform with the changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering. This requirement previously applied to both options separately in sections 2013 and 2015

---

[80] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-1: Purpose and Rationale for State and Local Government Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph1.pdf*, last accessed May 16, 2025).

[81] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).

[82] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

17. Section 2013(j) through 2013(j)(3). Requirement to Hire Compliant Fleets.

Purpose

The purpose of this change is to move these sections; 2013(j), 2013(j)(1), 2013(j)(2), and 2013(j)(3) to the new Hiring Compliant Fleets section 2013.7(c).

Rationale

These changes are necessary to position all requirements specific to hiring entity applicability and associated requirements for hiring compliant fleets in the same section to improve readability and organization.

18. Section 2013(j). Certificate of Reported Compliance and Compliant Fleet List.

Purpose

The purpose of this change is to update section references and to remove the term “CARB issued ID” and replace it with “TRUCRS identification.”

Rationale

This change is necessary to specify which reporting system identification number will be listed on the CARB Advanced Clean Fleets webpage and used to identify fleets under the ACF regulation. Changes to numbering and section references are necessary to conform with the changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

19. Sections 2013(l) through 2013(n)(7)(D).

Purpose

The purpose of this change is to move the previously numbered sections 2013(l), 2013(m), 2013(n), 2013(n)(1), 2013(n)(2), 2013(n)(3), 2013(n)(4), 2013(n)(4)(A), 2013(n)(4)(B), 2013(n)(5), 2013(n)(6), 2013(n)(7), 2013(n)(7)(A), 2013(n)(7)(B), 2013(n)(7)(C), 2013(n)(7)(C)(1), 2013(n)(7)(C)(2), 2013(n)(7)(C)(3), and 2013(n)(7)(C)(4), to the ZEV Purchase Schedule section 2013.1.

Rationale

These changes are necessary to position all requirements specific to the ZEV Purchase Schedule default compliance path for SLG fleets in the same section to improve readability and organization and prevent conflicting requirements or unintended flexibilities due to moving the ZEV Milestones Option into section 2013.6. Changes to numbering and section references are necessary to conform with the changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

20. Section 2013(m). Transit Agency Exemption.

a. Purpose

The purpose of the changes in this section is to add new subsections (1) and (2) and conforming language to 2013(t) to specify that the only vehicles eligible for the exemption are vehicles that directly support and maintain transit service operations a majority of the time or vehicles that provide transit passenger transportation services a majority of the time. Section references were updated to have this provision’s applicability expanded to the ZEV Milestones Option.

Rationale

This change is necessary to close a potential loophole by which entities that serve multiple functions without designating different departments also meet the definition of a transit agency and misinterpret the exemption to apply to any other vehicles in their fleet that have nothing to do with transit operations. For example, a city or county that operates transit buses, road maintenance, and garbage services cannot claim the transit fleet exemption for their garbage truck fleet or road maintenance vehicle fleet. This ensures only one reasonable interpretation of the language that aligns with the original intent of the provision as discussed in the original ACF rulemaking ISOR and 15-day changes notices. Changes to numbering and section references are necessary to conform with the changes to ZEV Purchase Schedule and ZEV Milestones Option requirements and numbering.

The change to include the ZEV Milestones Option in this provision's applicability is necessary because, under the existing flexibility to follow the ZEV Purchase Schedule and delay opting into the ZEV Milestones Option until 2030, transit fleets would not have been expected to meet ZEV Milestones requirements before then.

21. Section 2013(n) through 2013(n)(4). "ZEV Fleet" Recognition

Purpose

The purpose of this change is to copy the "ZEV Fleet" Recognition section from 2015(n) over to 2013(n). The purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[83,84,85]

Rationale

This change is necessary to conform with the repeal of sections 2015 through 2015.6 and to copy the ZEV Milestones Option into section 2013.6.

22. Section 2013 Authority cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB 1594.

---

[83] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[84] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[85] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

H. Title 13, Section 2013.1. State and Local Government Agency Fleet ZEV Purchase Schedule.

1. Section 2013.1. ZEV Purchase Schedule.

Purpose

The purpose of the change is to move the ZEV Purchase Schedule e from section 2013(m) to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article.

2. Section 2013.1(a)(1) and 2013.1(a)(1)(A) and (B). ZEV Purchase Schedule.

Purpose

The purpose of the change in this section is to add new subsections into which the previously numbered sections 2013(d)(1) and 2013(d)(1)(A) and (B) are moved to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article.

3. Section 2013.1(a)(2). ZEV Purchase Schedule.

Purpose

The purpose of the change in this section is to add a new subsection into which the previously numbered section 2013(d)(2) is moved to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying of the ZEV Milestones Option into section 2013.6 of this article.

4. Section 2013.1(b). Rounding.

Purpose

The purpose of the change in this section is to add a new subsection into which the previously numbered section 2013(g) is moved to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article.

5. Section 2013.1(c). ZEV Accounting.

Purpose

The purpose of the change in this section is to add a new subsection into which the previously numbered section 2013(h) is moved to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article.

6. Section 2013.1(d). Early ZEV Purchases.

Purpose

The purpose of the change in this section is to add a new subsection into which the previously numbered section 2013(i) is moved to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and moving the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and copying the ZEV Milestones Option into section 2013.6 of this article.

7. Section 2013.1(e). Order Cancellations.

Purpose

The purpose of the change in this section is to add a new subsection into which the previously numbered section 2013(l) is moved to conform with changes related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article.

8. Section 2013.1(f) and 2013.1(f)(1) through (7). Exemptions and Extensions.

Purpose

The purpose of the changes in this section is to add new subsections into which the previously numbered sections 2013(n) and 2013.1(n)(1) through (7) are moved to conform with changes

related to moving all ZEV Purchase Schedule requirements into section 2013.1 and copying the ZEV Milestones Option into section 2013.6.

Rationale

This change is necessary to improve readability and organization of the requirements due to the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article.

9. Section 2013.1(f)(2). Daily Usage Exemption.

Purpose

The purpose of the changes in this section is to add language “except as provided in section 2013.1(g),” to exclude qualifying vehicles from the requirement to meet the minimum age threshold of 13 model years.

The purpose of the changes in this section is to add “all vehicle purchases other than the vehicles included in the exemption application must be ZEVs during the calendar year until the applicable requirements of 2013.1(a) are met,” which establishes a process to ensure compliance with purchases made during a calendar year in addition to those purchased under an exemption.

Rationale

This change is necessary to differentiate that traditional utility-specialized vehicles may instead qualify for early access to the Daily Usage Exemption pursuant to the criteria specified in section 2013.1(g) as required by AB 1594.

The addition of “all vehicle purchases other than the vehicles included in the exemption application must be ZEVs during the calendar year until the applicable requirements of 2013.1(a) are met” is necessary to be more explicit in how to determine compliance with the annual fleetwide requirements of section 2013.1(a) when an ICE vehicle is purchased pursuant to a granted exemption, especially if the fleet owner changes the number of vehicle purchases in the same year. Exemptions to purchase ICE vehicles do not change the required number of annual ZEV purchases to comply if the requirement could be met without an exemption by the end of the compliance year. This change is also necessary to ensure fleet owners cannot interpret an approved exemption as a loophole if an exemption is approved under one set of circumstances, then the applicant later changes their plan and purchases more of additional vehicles in the same year that were not part of the initial application. For example, if fleet owner A is planning to purchase four vehicles where two are available as a ZEV, no exemption is needed to comply with the 50% ZEV purchase requirement. If fleet owner B is in a similar situation and submits an exemption request to purchase two vehicles that are not available as a ZEV and two vehicle extensions are approved, but fleet owner B, in the same compliance year, later decides to purchase two more vehicles that are available as ZEVs, the owner must still purchase two ZEVs just like fleet owner A.

10. Section 2013.1(f)(3). ZEV Infrastructure Delay Extension.

Purpose

The purpose of the changes in this section are to remove the phrase “no earlier than when the model year of the ICE vehicle being replaced reaches 13 years old” in order to allow a fleet to purchase a replacement vehicle as outlined in the regulation language.

Rationale

This change is necessary to expand access to the infrastructure delay extension for public fleets so they do not have to wait until their vehicles are at least 13 years old to apply. The fleet owner still must request and obtain the extension pursuant to the criteria specified in section 2013.2(c).

11. Section 2013.1(f)(4). ZEV Purchase Exemption.

Purpose

The purpose of the changes in this section is to add language “except as provided in section 2013.1(g),” to exclude qualifying vehicles from the requirement to meet the minimum age threshold of 13 model years.

The purpose of the changes in this section is to add “all vehicle purchases other than the vehicles included in the exemption application or purchased pursuant to this exemption must be ZEVs during the calendar year until the applicable requirements of 2013.1(a) are met,” which establishes a process to ensure compliance with purchases made during a calendar year in addition to those purchased under an exemption.

Rationale

This change is necessary to differentiate that traditional utility-specialized vehicles may instead qualify for early access to the ZEV Purchase Exemption pursuant to the criteria specified in section 2013.1(g) as required by AB 1594.

The addition of “all vehicle purchases other than the vehicles included in the exemption application or purchased pursuant to this exemption must be ZEVs during the calendar year until the applicable requirements of 2013.1(a) are met” is necessary to be more explicit in how to determine compliance with the annual fleetwide requirements of section 2013.1(a) when an ICE vehicle is purchased pursuant to a granted exemption especially if the fleet owner changes the number of vehicle purchases in the same year. Exemptions to purchase ICE vehicles do not change the required number of annual ZEV purchases to comply if the requirement could be met without an exemption by the end of the compliance year. This change is also necessary to ensure fleet owners cannot interpret an approved exemption as a loophole if when an exemption is approved under one set of circumstances then the applicant later purchases additional vehicles in the same year that were not part of the initial application. For example, if fleet owner A is planning to purchase four vehicles where two are available as a ZEV, no exemption is needed to comply with the 50% ZEV purchase requirement. If fleet owner B is in a similar situation and submits an exemption request to purchase two vehicles that are not available as a ZEV and two vehicle extensions are approved, but fleet owner B, in the same compliance year, later decides to purchase two more vehicles that are available as ZEVs, the owner must still purchase two ZEVs just like fleet owner A.

12. Section 2013.1(f)(6). Intermittent Snow Removal Vehicles.

Purpose

The purpose of the changes in this section are to modify the phrase “added to the California fleet prior to January 1, 2030” to “purchased prior to January 1, 2030.”

Purpose

This change is necessary to revise the eligibility requirement for designating intermittent snow removal vehicles to those vehicles purchased prior to January 1, 2030, rather than those added to the California fleet prior to that date. The regulation requirements are based on purchase date and vehicle build lead times can range from months to several years. This provides additional flexibility to obtain the exemption for fleets that made their purchases prior to January 1, 2030.

13. Section 2013.1(f)(7). Non-repairable Vehicles.

Purpose

The purpose of the changes in this section are to remove the phrase “if approved, they may” in order to allow a fleet to purchase a replacement vehicle as outlined in the regulation language. Changing the language from “adding the used vehicle to” to “reporting the used vehicle as part of” specifies that there is a reporting requirement. The changes include adding “non-repairable” to the description and identifying the section for which the request for the submission was made.

Rationale

This change is necessary to specify the vehicle should be reported after the fleet owner purchases a replacement for a non-repairable vehicle and removes the requirement to submit the application before purchase.

14. Section 2013.1(g). Traditional Utility-Specialized Vehicle Early Access.

Purpose

The purpose of this section is to add language specifying “a public agency utility that requests the exemptions in sections 2013.2(b) or 2013.2(d)(2), or uses the exemption in section 2013.2(d)(1), earlier than when the model year of the traditional utility-specialized vehicle being replaced reaches 13 years old must: either meet the criteria specified in section 2013.1(g)(1) or in section 2013.1(g)(2), and if utilizing an exemption pursuant to this section, must meet the criteria specified in sections 2013.2(b)(8) or 2013.2(d)(4). Fleet owners using this provision must keep records as specified in section 2013.4(l).”

Rationale

This section’s addition is necessary because AB 1594 requires that public agency utilities fleets be granted access to certain provisions of the regulation to request exemptions to replace traditional utility-specialized vehicles earlier than the 13-year limitation that exists in the regulation. These provisions were developed through the public process and through consultation with public agency utility fleets.

It is necessary to specify the criteria by which such agencies would access the provisions to ensure clear and consistent application and to ensure only one reasonable interpretation of the allowed access criteria. Specific rationale for the criteria are provided in the following sections and allows a fleet owner to demonstrate the vehicle usage exceeds a minimum threshold either as specified in Table A, or as specified in the agency’s predetermined vehicle replacement plan, in lieu of meeting the 13-year minimum vehicle age threshold as the sole replacement criteria to access exemptions. This provision recognizes that the ZEV Purchase Exemption List is a streamlined process which does not require an application to CARB. The

recordkeeping requirements referenced in this section are necessary to ensure that fleets requesting the early access provisions satisfy the applicable criteria and enhances enforceability of the provisions through audit of records.

15. Section 2013.1(g)(1) and 2013(g)(1)(A). Traditional Utility-Specialized Vehicle Early Access.

Purpose

The purpose of the changes in this section are to add new subsections (1), (1)(A), and Table A: Usage Thresholds for Traditional Utility-Specialized Vehicles.

Subsection (1) states: "A public agency utility that requests the exemptions in sections 2013.2(b) or 2013.2(d)(2) must submit the information specified in section 2013.1(g)(1)(A) to *TRUCRS@arb.ca.gov* in their exemption application. A public agency utility that uses the exemption in section 2013.2(d)(1), prior to making the vehicle purchase, must submit to *TRUCRS@arb.ca.gov* the VIN, TRUCRS ID of the fleet, and an attestation that the thresholds specified in Table A in section 2013.1(g)(1)(A) were met by the existing vehicle being replaced."

Subsection (1)(A) states: "Submit documentation as specified in section 2013.4(c) of the vehicle's current odometer reading showing it meets or exceeds the thresholds specified in Table A, based on the vehicle's weight class. For vehicles equipped with PTOs, in lieu of the odometer reading, the public agency utility may alternatively submit documentation as specified in section 2013.4(l) of the vehicle's current engine hour meter reading showing it meets or exceeds the hour threshold specified in Table A."

"Table A: Usage Thresholds for Traditional Utility-Specialized Vehicles" specifies vehicle classes or categories and mileage or engine hour thresholds that apply based on the vehicle class or category.

Rationale

The language in subsection (1) is necessary to specify how fleet owners must submit information to substantiate their use of the provision.

If using the Daily Usage Exemption or the fleet-specific application process for the ZEV Purchase Exemption, it is necessary to require fleet owners submit the information required to substantiate their request in an email to *TRUCRS@arb.ca.gov* as part of their application to streamline the application process and reduce the burden of exemption application on fleet owners and of tracking and processing the information on CARB staff. To request these exemptions, fleet owners must already submit their applications to *TRUCRS@arb.ca.gov*, so this new requirement aligns with existing practice and requirements.

If using the Streamlined ZEV Purchase Exemption List, it is necessary to require fleet owners submit to *TRUCRS@arb.ca.gov* the requested information prior to making the purchase because staff will need to assess which vehicle is being replaced and assess the required attestation ahead of the fleet owner placing their purchase from the streamlined list. It is necessary to require submission of the VIN number and TRUCRS ID of the fleet to determine which vehicle is being replaced and to ensure enforceability of the requirement that the vehicle being purchased is the same weight class and configuration. It is necessary to have the information submitted to *TRUCRS@arb.ca.gov* to align with existing exemption processing procedures. It is necessary to require fleet owners attest that their replacement vehicle meets

the specified thresholds to align with the spirit of the streamlined nature of the Streamlined ZEV Purchase Exemption List. This provision was intended to provide quick access to exemptions without submitting extensive documentation, so requiring an attestation rather than specific documentation aligns with the intent to keep this a streamlined exemption process.

The language in subsection (1)(A) is necessary to specify the documentation that must be submitted to demonstrate vehicle odometer or hour meter readings meet or exceed the thresholds specified in Table A. The requirements align with existing odometer or hour meter documentation that must already be provided by fleets using odometer or hour meter-based provisions, which reduces the burden of recordkeeping on fleet owners, and uses records likely to already be kept in the normal course of business. It is necessary to specify that hour meter readings must be kept for vehicles with PTO because these vehicles typically operate fewer miles and higher stationary hours, necessitating records be kept to demonstrate vehicle usage based on time rather than mileage.

The addition of Table A is necessary to specify the smallest number of miles by vehicle weight class, or engine hours needed to be accrued by a traditional utility-specialized vehicle under the AB 1594 early access provision. These criteria meet the intent of AB 1594 because it does not exclusively rely on the model year of the vehicle needing to be replaced. The total life to date costs of a vehicle or equipment has been calculated in the “Fleet Replacement Method: Evaluation and Refinement” study prepared for Caltrans Division of Equipment by the University of California at Riverside, which provided a base to find the optimal economic life and usage thresholds for Traditional Utility-Specialized Vehicles stated in Table A. The study was suggested by a member of the Association of California Water Agencies (ACWA), a private water utility trade association, as the member stated they were directed to use the Caltrans replacement schedule by the California Public Utilities Commission (CPUC) when determining when they can replace their vehicles. It was necessary to rely on this study because we determined it provided a comprehensive review and was a reasonable basis of a schedule for fleets to use, as it was already in use by some of these public agency utility fleets. Table A was split into two Classes each (3-4, 5-6, & 7-8) due to the similarity of available body types within each range of vehicle classes and therefore due to the similarity of how they would be used.

16. Section 2013.1(g)(2), (g)(2)(A), and (g)(2)(B). Traditional Utility-Specialized Vehicle Early Access.

Purpose

The purpose of the addition of this section is to let a public agency utility that they must submit the information specified below to *TRUCRS@arb.ca.gov*, if using criteria (2) to get early access to the exemptions in sections 2013.2(b) and (d). The information they must submit is an attestation signed by the fleet owner that the vehicle meets replacement criteria that was established prior to using or requesting the exemption. Replacement criteria must include minimum vehicle age, vehicle miles traveled, or engine hours as criteria to replace the vehicle and must have been established prior to using or requesting the exemption. The replacement criteria must have been approved by the fleet owner’s governing board, chief executive, or the chief executive’s designee in an established written plan, policy or document.

Rationale

This addition is necessary to give a public agency utility flexibility to apply for the early access provisions of AB 1594 if they have a predetermined replacement plan already approved by their decision-making body that supports the need to purchase a new utility-specialized vehicle. This flexibility was included as an alternative in cases where a predetermined decision to replace a traditional utility-specialized vehicle is either more frequent than the minimum usage thresholds in Table A, or if the policy uses different criteria than age, mileage or hours.

CARB staff consulted with public agency utilities on their procurement plans for medium- and heavy-duty ZEV when purchasing replacements for traditional utility-specialized vehicles. Public agency utility fleets provided a myriad of factors besides vehicle age that influence their determination of when a vehicle has reached the end of life. Staff has noted that odometer readings, hour meter data, and vehicle reliability all play a part in making this determination. Additional factors include maintenance costs; the availability and affordability of replacement parts as well as a qualified workforce to service the vehicles; and pre-determined vehicle retirement schedules. Workforce limitations could be particularly impactful for utilities in remote locations and could be the limiting factor in determining when a traditional utility-specialized vehicle can be replaced. Therefore, CARB staff are allowing a public agency utility to use their own replacement criteria, as long as it has been pre-approved by their governing board or through an established written policy. The intent of AB 1594 is to give a public agency utility flexibility when needed to maintain reliable service and respond to major foreseeable events. The reason CARB staff is requiring the replacement criteria be pre-approved by a public agency utility decision making body either through a pre-approval process or by a written policy is to limit potential gaming opportunities. Specifically, the ACF regulation requires 180-days from the time the Executive Officer notifies the public to when a vehicle will be removed from the ZEV Purchase Exemption List because it is available to purchase as ZEV. During this 6-month period a public agency utility fleet could submit their own replacement criteria to avoid having to make the ZEV purchase once the vehicle is removed from the list. If the replacement criteria is pre-approved by a public agency utility decision making body, then this situation is less likely to occur.

If using the Daily Usage Exemption or the fleet-specific application process for the ZEV Purchase Exemption, it is necessary to require fleet owners submit the information required to substantiate their request in an email to *TRUCRS@arb.ca.gov* as part of their application to streamline the application process and reduce the burden of exemption application on fleet owners and of tracking and processing the information staff. To request these exemptions, fleet owners must already submit their applications to *TRUCRS@arb.ca.gov*, so this new requirement aligns with existing practice and requirements.

If using the Streamlined ZEV Purchase Exemption List, it is necessary to require fleet owners submit to *TRUCRS@arb.ca.gov* the requested information prior to making the purchase because staff will need to assess which vehicle is being replaced and assess the required attestation ahead of the fleet owner placing their purchase from the streamlined list. It is necessary to require submission of the VIN number of the fleet to determine which specific vehicle is being replaced and to ensure enforceability of the requirement that the vehicle being purchased is the same weight class and configuration. It is necessary to require submission of the TRUCRS ID to allow CARB staff to easily access the fleet's information to accurately review their exemption application. It is necessary to have the information submitted to *TRUCRS@arb.ca.gov* to align with existing exemption processing procedures. It is necessary

to require fleet owners attest that their replacement vehicle meets the specified thresholds to align with the spirit of the streamlined nature of the Streamlined ZEV Purchase Exemption List. This provision was intended to provide quick access to exemptions without submitting extensive documentation, so requiring an attestation rather than specific documentation aligns with the intent to keep this a streamlined exemption process.

17. Section 2013.1 Authority Cited

Purpose

The purpose of this change is to add section 28500 of the Vehicle Code to the authority cited.

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB 1594.

I. Title 13, Section 2013.2. State and Local Government Agency Fleet Exemptions.

1. Section 2013.2. State and Local Government Fleet Exemptions.

Purpose

The entire section was renumbered from 2013.1.

The purpose of the change in this section is to add the following sentences to the introductory paragraph for the section: “Exemptions and extensions are only applicable if the fleet owner cannot comply with the requirements of section 2013.1. or 2013.6 due to circumstances beyond their control. For example, a ZEV Purchase Exemption is not necessary if a sufficient number of ZEVs are available to purchase in the calendar year to meet the requirements of section 2013.1 without an exemption.”

Rationale

The change in this section is necessary to conform with changes made to section 2013.1(f)(2) and (4) 2013.6(g)(2) and (5). This change is necessary to set forth the concept that exemptions are meaningless if enough ZEVs are available to purchase in the calendar year for which the exemption is requested. For example, a fleet owner that is purchasing four vehicles in the 2024 calendar year would need two of the purchases to be ZEVs. If the fleet owner requests an exemption for one of the four vehicles, the requirement to purchase two ZEVs out of the four would still apply. Therefore, submitting an exemption application would serve no purpose for the fleet owner, and processing it would be unnecessary for staff. This language establishes the requirement that exemptions must be necessary for compliance and requested for reasons beyond the control of the fleet owner to be processed.

2. Section 2013.2(a)(3). Backup Vehicle Exemption.

Purpose

The purpose of this change is to redirect the reference of the moved ZEV Purchase Schedule option to section 2013.1 and include reference to the ZEV Milestones Option added to section 2013.6.

Rationale

This change is necessary conform with the repeal of section 2015 through 2015.6 and subsequent copying the ZEV Milestones Option into section 2013.6 of this article, and movement of the ZEV Purchase Schedule to section 2013.1.

3. Section 2013.2(b). Daily Usage Exemption.

Purpose

The purpose of this change is to redirect the references to sections that have been moved from 2013(n)(2) to 2013.1(f)(2) and to additionally reference 2013.6(g)(2).

Rationale

This change is necessary to redirect the references of the Daily Usage Exemption to section 2013.1(f)(2) and 2013.6(h)(2) in order to ensure continuity and uniformity of the ACF regulation.

4. Section 2013.2(b)(1). Daily Usage Exemption.

Purpose

The purpose of the changes in this section are to add “TRUCRS Identification number for the fleet, and”, “VIN,” and to change “the” to “each.”

Language was added to this section that specifies that until January 1, 2027, if using the ZEV Purchase Schedule of section 2013.1, fleet owners must submit the number of ICE vehicles and number of ZEV and NZEV purchases already placed and planned during the calendar year, and indicate whether any of the ICE vehicle purchases are being purchased with an exemption and include the name of the exemption for which it is eligible or has already been granted. The exemptions specified have been moved from 2013(n)(2) to 2013.1(f)(2) or 2013.6(g)(2).

Rationale

These changes are necessary to streamline exemption processing by enabling staff to quickly identify which fleet is submitting the request and for which vehicles the exemption is requested.

The addition of the language requiring submission of purchases is necessary to assess the necessity of the exemption and establish whether the fleet owner needs the exemption to comply. The exemptions in the regulation are designed to address situations outside of a fleet owner’s control where they cannot comply. These numbers will establish the total number of ZEV purchases the fleet owner will make during the calendar year. If that number meets or exceeds 50%, the exemption is not necessary. If it does not, the fleet owner may apply. It is necessary to obtain the number of vehicles purchased pursuant to exemptions and the name of the exemptions to calculate whether the 50% requirement could be met considering existing or planned exemption purchases. It is necessary to specify this requirement only applies until January 1, 2027, because after this date the regulation requires 100% ZEV purchases and providing this information is no longer necessary as the fleet cannot comply without an exemption or extension. It is necessary to specify this requirement only applies to fleets using the ZEV Purchase Schedule because only fleets following this compliance pathway will have 100% ZEV purchase requirements after January 1, 2027, and fleets using the ZEV Milestones Option have other criteria requirements.

The exemption location change is necessary to redirect the references of ZEV Purchase Schedule option to section 2013.1(f)(2) and ZEV Milestone option to its new section in 2013.6(hg)(2) in order to ensure continuity and uniformity of the ACF Regulation.

5. Section 2013.2(b)(3). Daily Usage Exemption.

Purpose

The purpose of the changes in this section is to specify the information that must be included in a daily usage exemption application. Language was added to specify that “alternatively” to calculating mileage, fleet owners may collect and submit energy usage data as specified in the referenced section to calculate the equivalent needed rated energy capacity of a BEV based on real-world data instead of calculated range for applications that include vehicles that operate truck-mounted equipment while stationary. Other language was removed or moved to conform with the changes made in this section.

Rationale

The language changes in this section are necessary to establish that the energy usage data collection method is an alternative method to substantiate the exemption request for applications that include vehicles with truck mounted equipment, and to establish that the data collected will be used to calculate an equivalent needed rated energy capacity of a BEV to base the exemption on real-world data instead of a calculated range which is more representative of the fleet owner’s usage of the vehicle and may prevent unnecessary exemptions from being granted. Other language was removed or moved to conform with the changes made in this section.

6. Section 2013.2(b)(3)(A). Daily Usage Exemption.

Purpose

The purpose of the changes in this section is to specify what information is needed to be included in an exemption application based on vehicle energy usage instead of solely the calculated range. These changes now specify the specific test method to compare an ICE and a BEV of the same weight class and configuration operated on similar daily assignments to establish a comparative kilowatt-hour per mile and kilowatt-hour per hour of stationary operation. The changes include requiring the fleet owner to gather and submit data on the energy used to drive, the “average cabin temperature if climate control (such as heating or air conditioning) is used while stationary,” and energy used to operate truck mounted equipment while stationary. It also requires the total hours the vehicle is stationary while equipment is in use, and total hours of operation including driving for each workday. The changes also include adding language to allow the fleet owner to submit more than 5 workdays worth of data, establishing that at least 5 workdays of data must be collected and submitted. The changes also establish that the comparative average over the 5-day period of kilowatt-hours per mile driven and kilowatt-hours consumed per hour while stationary will be calculated and used in the daily usage report when determining whether the exemption is necessary. Finally, language was added to specify fleet owners may use test data that meets the new criteria from any source, but that the fleet owner’s vehicles for which they are applying for an exemption must have similar operations as the vehicles in the test data based on fuel usage.

Rationale

These changes are necessary to establish a representative energy usage number to be used to substantiate the necessity of a daily usage exemption request. It is necessary to require data to be collected and submitted for both a BEV and an ICE vehicle of the same weight class and configuration, operating on similar daily routes, to calculate an energy consumption rate that is representative of similar vehicles operated on similar assignments. It is necessary to provide an example of the units to be used for energy usage to ensure consistency and standardized calculations. It is also necessary to require collection and reporting of average cabin temperature if climate control is used while stationary, total hours of operation including driving, total hours the vehicle is stationary while using equipment, and energy used to operate equipment while the vehicle is stationary to calculate a representative and comparable energy consumption rate over the total daily mileage and energy consumed while operating stationary. For example, for a fleet with bucket trucks, the fleet will submit the total number of hours that the equipment is in use and when the operator is inside of the bucket. Time when the bucket is empty and not being used, and worker breaks would be excluded. The data recordings are necessary to calculate the needed comparable BEV rated energy capacity for each ICE vehicle submitted in the fleet owner's application and daily usage report to ensure the exemption is necessary consistent with the already-established calculation method. It is necessary to state the calculated energy consumption rates will be used in the daily usage report calculations to establish how these newly calculated values will be incorporated into the existing method. It is necessary to allow fleets to use such test data from another source, as long as the vehicles and operations are similar to those in their fleet based on fuel usage, to ensure a fair comparison between existing vehicles in the fleet and the tested energy consumption rates of a comparable ZEV.

7. Section 2013.2(b)(4). Daily Usage Exemption.

Purpose

The purpose of the changes in this section is to specify the information needed to submit data for an ICE with truck mounted equipment. The section now lists the specific regulation sections that describe what data needs to be collected and how to calculate the equivalent needed energy capacity for a BEV. Initially, this information was included in one section but has been broken into two sections with more details. The references now reflect that update.

The term "energy used to drive" was replaced with "needed energy capacity" for trucks with truck mounted equipment. Language was added to specify that non-working days for each ICE vehicle are excluded from the mileage or energy readings. The changes also include identification of the lowest needed energy capacity, if applicable, and specifying traditional utility-specialized vehicles used by public agency utilities will not be subject to the requirement to exclude three highest mileage readings or needed energy capacities.

Rationale

The changes are necessary to reference the regulation sections that explain the needed energy capacity and to reference the new section. It is also necessary to specifically explain how to calculate the highest remaining mileage and needed energy capacity so fleets understand how the calculation is done so they can see if they qualify based on mileage or energy usage before submitting an application. The change for the traditional utility-specialized vehicles to retain the three highest readings is necessary to implement the changes required in

AB 1594. Additionally, excluding non-working days from the data is necessary to allow for more accurate representation of the daily miles traveled or energy used to drive, as applicable.

8. Section 2013.2(b)(4)(A). Daily Usage Exemption.

Purpose

The purpose of the changes in this section is to describe the daily usage data that the fleet owner must submit for vehicles that operate truck-mounted equipment. Fleets will need to submit energy usage data collected for an ICE vehicle that operates truck-mounted equipment while stationary in comparison to data collected from an equivalent ZEV under the same operating conditions during the test period. This section was also separated into two sections with additional details on what data needs to be submitted in the application. The fleet owner will now need to submit the total hours each vehicle is stationary while equipment is in use each workday and must submit the total fuel used by each vehicle for the 30-workday period. An example unit was also added, in gallons of diesel.

Rationale

The changes are necessary to identify what test data must be submitted for each ICE vehicle used for the test and to explain specifically which data staff will need to review to evaluate the application. Splitting the original section into two sections improves readability and separates the data collection into more logical parts. In order to correctly evaluate a submission and compare to a BEV with the highest rated energy capacity currently available on the market, staff will need to compare how much energy was used for each workday for the ICE vehicle and comparable ZEV. It is necessary for staff to review the number of hours the truck-mounted equipment was used each day to determine how much energy was used directly by the truck-mounted equipment, rather than total energy. For example, for a fleet with bucket trucks, the fleet will submit the total number of hours that the equipment is in use and when the operator is in the bucket. Time when the bucket is empty, and worker breaks would be excluded. Separating the mileage and energy used by truck mounted equipment while stationary is important because the amount of energy used for driving and energy used while using truck mounted equipment while stationary is different for an ICE vehicle when compared to a ZEV in the same duty cycle. Even though the two values sum together to determine the total energy usage, each value is determined with a different method to account for different efficiencies of the vehicles.

Previously, this section did not require the total fuel consumed over the 30-workday period for vehicles identified in the application. This change is necessary to identify whether test data being used is representative of the operation for the vehicle class and configuration from one fleet is applicable to another fleet that may use the test data. The total fuel consumed to determine if the test vehicle is comparable to the fuel usage for the ICE vehicles identified in the application when energy used is adjusted for actual miles driven and hours operated while stationary.

9. Section 2013.2(b)(4)(B). Daily Usage Exemption.

Purpose

The purpose of the change in this section is to add a new subsection (B) which explains in more detail how to calculate the truck mounted equipment energy usage and what energy usage data (including units) must be submitted for a complete application. Fleets would be required to multiply the miles traveled for each ICE vehicle by the kilowatt-hours per mile of the

comparable BEV, then multiply the hours of stationary operation for each ICE vehicle by the kilowatt-hours consumed per hour of the comparable BEV and lastly sum the two products to calculate the total needed energy capacity of the comparable BEV with the highest rated energy capacity available. Fleets will only need to submit this type of data for each vehicle if electing to use truck mounted equipment energy usage test date in their application.

Rationale

The changes are necessary to improve readability and establish how test data will be used to evaluate exemptions for vehicles with truck-mounted equipment. Specific instructions that are listed here are required to instruct fleets precisely on what data is needed and how it would be used to evaluate an application. By providing explicit calculation instructions, this will aid in reducing incomplete/incorrect data submissions and calculations, assist staff in evaluating consistent applications and data with streamlined and consistent calculations, and aid applicants on how calculations are performed for demonstrating eligibility for the exemption. The calculation provided is necessary to follow good engineering practice in determining the rated energy capacity needed by a comparable BEV using the data required to be collected by the fleet in previous sections.

10. Section 2013.2(b)(7). Daily Usage Exemption

Purpose

The purpose of this change is to add a new subsection (7) which requires fleet owners to report which vehicles are being replaced, if applicable, pursuant to exemptions in sections 2013.2(b). Additionally, the changes would require fleet owners to remove those identified vehicles from the TRUCRS system and the California fleet within 30 calendar days of receiving the replacement vehicle.

Rationale

These changes are necessary to process exemption requests. Staff must be able to identify which vehicle is being replaced by the new ICE vehicle that the fleet owner was approved to purchase, and this change requires the fleet owner to provide that information as part of their annual report. The provision originally applied to the ZEV Purchase Exemption but was expanded to include the Daily Usage Exemption in section 2013.2(b). to ensure that this information is collected for the relevant exemptions.

The requirement that the replacement vehicle be removed from TRUCRS and the California fleet is necessary to conform with the requirement that the approved ICE purchase is replacing an existing vehicle, so therefore the original vehicle cannot continue to be kept in the reporting system or in service. The 30 calendar day timeframe is necessary for regulatory consistent with the timeframe requirements specified in section 2013.3(e) for other changes to an existing fleet and is a reasonable timeframe in which to report information to CARB to ensure timely reflection of compliance while balancing the burden of reporting for fleets.

11. Section 2013.2(b)(8). Daily Usage Exemption

Purpose

The purpose of this change is to add a new subsection (8) which requires public agency utility that replace traditional utility-specialized vehicles under this exemption using the early access provision must consider ePTO in solicitation for bids for the replacement vehicle if it is configured to perform work that can only be done while the vehicle is stationary.

Rationale

This change is necessary to require public agency utilities to consider the possible emissions reductions and cost savings that may be realized with ePTO systems, whereas without this requirement the fleet owner may not be aware of these potential benefits. This would also provide the opportunity for the public and the agency's board members to learn more about the emissions benefits of ePTOs so that they may be considered in future decisions and different applications. The purpose of adding the requirement to bid on ePTO for vehicles that primary do work while stationary is to. Examples of vehicles that perform work while stationary include common aerial boom applications such as bucket trucks but exclude trucks configured as cement mixers and those commonly referred to as dump trucks that use PTO while the vehicles are in motion.

12. Section 2013.2(c). ZEV Infrastructure Delay Extension.

Purpose

The purpose of this change is to redirect the reference of the ZEV Purchase Schedule of 2013(n) to section 2013.1(f)(3) and reference of the ZEV Milestones option to section 2013.6(g)(3).

Rationale

This change is necessary to redirect the references of ZEV Purchase Schedule option to section 2013(f)(3) and ZEV Milestone option to its new section in 2013.6(g)(3) in order to ensure continuity and uniformity of the ACF Regulation Section 2013.2(c)(2)(C)1 ZEV Infrastructure Site Electrification Delays.

13. Section 2013.2(c)(1). ZEV Infrastructure Delay Extension.

Purpose

The purpose of this change is to verbiage from "all of" to "the documents specified in subsections (A) through (D) below."

Rationale

This change is necessary to improve readability and specificity of the required documentation.

14. Section 2013.2(c)(2). ZEV Infrastructure Delay Extension.

Purpose

The purpose of the change is to add the verbiage "specified in subsections (A) and (B)" and "in subsection (C)"

Rationale

This change is necessary to inform readers that section 2013.1 is now 2013.2. The changes also improve readability and specificity of the required documentation.

15. Section 2013.2(c)(2)(C)1. ZEV Infrastructure Delay Extension.

Purpose

The purpose of the change in this section is to establish that the site electrification request to the utility must be submitted at least one year prior to the next applicable compliance deadline.

Rationale

This change is necessary to establish that the fleet owner is making a good faith effort to comply with the regulation's requirements. Many infrastructure project timelines can be completed within a year though some take longer, as discussed in the original Advanced Clean Fleets Initial Statement of Reasons and Final Statement of Reasons. Utilities consistently encourage their fleet customers to reach out to begin infrastructure discussions as early as possible, so this timeframe is reasonable to provide utilities sufficient advanced notice of a fleet owner's infrastructure request. This change was made in response to stakeholder concerns.

16. Section 2013.2(c)(2)(C)2. ZEV Infrastructure Site Electrification Delays.

Purpose

The purpose of the change in this section is to rearrange some language in the section and include a requirement that fleet owners submit documentation from the utility that indicates the utility cannot supply sufficient power to the site to support the number of ZEVs needed to meet the fleet's next compliance deadline.

Rationale

The changes to rearranging existing requirement language are necessary to improve the readability of the section and conform with other changes in the section.

The additional documentation is necessary to clarify the necessity of the extension; if a fleet owner can get sufficient power from a utility to support the number of ZEVs needed to meet their deadline, an extension would not be necessary to meet the regulation's requirements.

17. Sections 2013.2(c)(2)(C)3. and 2013.2(c)(2)(C)3.a. ZEV Infrastructure Site Electrification Delays.

Purpose

The purpose of this change is to rearrange existing language that requires submission of a copy of an executed utility contract with an estimated project completion date, and that requires the fleet owner provide the utility's reason for the delay. Additionally, the changes add a condition that only if the utility can provide annual incremental power increases as part of the project plan would the fleet owner then be required to provide an estimate of available capacity the utility can provide to the site for each year of the delay. Last, the purpose of adding new subsection (a) is to establish different documentation requirements in case utilities are unable or unwilling to execute a contract; a signed attestation from the utility about the proposed project that states the reason why the utility will not proceed with the project.

Rationale

The changes to rearranging existing requirement language are necessary to improve the readability of the section and conform with other changes in the section.

The addition of a condition to the capacity information and modification to the documentation requirements are necessary to clarify requirements because staff is aware of instances where utilities were unable or unwilling to provide the information fleet owners would have been required to submit as part of a complete application, thereby preventing the fleet owner from applying. After input from stakeholders, fleet owners, and utilities, these changes were deemed necessary to clarify the extension documentation requirements. This change was made in response to stakeholder concerns.

18. Section 2013.2(c)(2)(C)4. ZEV Infrastructure Site Electrification Delays.

Purpose

The purpose of this change is to specify that the required information would only need to be submitted if the utility was able to provide a capacity estimate for each year of the requested extension.

Rationale

This change is necessary to reduce the documentation requirement on fleets in case a utility is not able to provide a year-by-year capacity estimate, which is a reality experienced by certain fleet owners. This change was made in response to stakeholder concerns.

19. Section 2013.2(c)(2)(C)6. ZEV Infrastructure Site Electrification Delays.

Purpose

The purpose of the change in this section is to add a new subsection which requires fleet owners to submit the TRUCRS identification number of the fleet, and the Vehicle Identification Number (VIN) of the ICE vehicles being replaced that are domiciled at the site location experiencing the delay. The required information should be reported as stated in 2013.2(c)(2).

Rationale

This change is necessary to streamline extension processing to quickly identify which fleet is submitting the request and for which vehicles the extension is requested, consistent with the existing eligibility criteria for vehicles being replaced to be domiciled at the location experiencing the delay.

20. Section 2013.2(d). ZEV Purchase Exemptions.

Purpose

The purpose of this change is to redirect the reference of the ZEV Purchase Schedule option section 2013(n) to section 2013.1(f)(4) and reference of the ZEV Milestones option to section 2013.6(g)(5).

Rationale

This change is necessary to redirect the references to section 2013.1(f)(4) and include section in 2013.6(g)(5) in order to ensure continuity and uniformity of the ACF Regulation.

21. Section 2013.2(d)(1). ZEV Purchase Exemption List.

Purpose

The purpose of this change is to redirect the reference of the ZEV Purchase Schedule option section 2013(n) to section 2013.1(f)(4).

Rationale

This change is necessary to redirect the references of ZEV Purchase Schedule option to section 2013(f)(4) in order to ensure continuity and uniformity of the ACF Regulation

22. Section 2013.2(d)(1)(a). Configurations List.

Purpose

The purpose of this change is to add language to specify the configurations list will include an evaluation of the body types listed.

Rational

This change is necessary to establish that only body types listed would be evaluated for inclusion in the Streamlined ZEV Purchase Exemption List because evaluating every possible body type for inclusion in the list would be too administratively burdensome, as thousands of possible body types and customizations would potentially need to be listed. Without the updated language, the plain reading of the text implies that other body types might be added to this list over time, so this language is necessary to limit the potential for such misinterpretation. This list was intentionally limited to the most commonly reported body types in the Large Entity Reporting dataset from 2021, as discussed in the original Advanced Clean Fleets rulemaking documents including the first 15-day changes notice and Final Statement of Reasons.

23. Section 2013.2(d)(2). ZEV Purchase Exemption Application.

Purpose

The purpose of the change is to redirect the reference from section 2013(n) to section 2013.1(f)(4) or 2013.6(g)(5).

Rationale

This change is necessary to redirect the references of ZEV Purchase Schedule option to section 2013(f)(4) and to conform with changes related to the repeal of section 2015 and associated move of the ZEV Milestones Option into section 2013.6, and to ensure uniformity and continuity of the ACF regulation.

24. Sections 2013.2(d)(2)(A) and 2013.1(d)(2)(A)1. ZEV Purchase Exemption Application.

Purpose

The purpose of the changes in these sections is to require the TRUCRS identification number be provided with the exemption application, and to move the requirement that the information submitted must be about the existing ICE vehicle being replaced from subsection (A)1. to subsection (A).

Language was added to this section that specifies that Until January 1, 2027, if using the ZEV Purchase Schedule of section 2013.1, submit the number of ICE vehicles and number of ZEV and NZEV purchases already placed and planned during the calendar year, and indicate whether any of the ICE vehicle purchases are being purchased with an exemption and include the name of the exemption for which it is eligible or has already been granted. The exemptions specified have been moved from 2013(n)(2) to 2013.1(f)(2) or 2013.6(g)(2).

Last, the purpose of the changes in this section are to add language specifying the body configuration and VIN of the vehicle must be submitted. The language “for an existing ICE vehicle being replaced in the fleet” were removed.

Rationale

The change to include the TRUCRS ID is necessary to streamline exemption processing by enabling staff to quickly identify which fleet is submitting the request and for which ICE vehicles are being replaced.

The addition of the language requiring submission of purchases is necessary to assess the necessity of the exemption and establish whether the fleet owner needs the exemption to comply. The exemptions in the regulation are designed to address situations outside of a fleet owner's control where they cannot comply. These numbers will establish the total number of ZEV purchases the fleet owner will make during the calendar year. If that number meets or exceeds 50%, the exemption is not necessary. If it does not, the fleet owner may apply. It is necessary to obtain the number of vehicles purchased pursuant to exemptions and the name of the exemptions to calculate whether the 50% requirement could be met considering existing or planned exemption purchases. It is necessary to specify this requirement only applies until January 1, 2027, because after this date the regulation requires 100% ZEV purchases and providing this information is no longer necessary as the fleet cannot comply without an exemption or extension. It is necessary to specify this requirement only applies to fleets using the ZEV Purchase Schedule because only fleets following this compliance pathway will have 100% ZEV purchase requirements after January 1, 2027, and fleets using the ZEV Milestones Option have other criteria requirements.

These changes are necessary to specify that the configuration that must be submitted is about the vehicle's body and aligns with the definition of "configuration" previously established in section 2013(b) and to include the vehicles VIN for staff to easily identify which vehicle is being replaced.

The change to remove the phrase "for an existing ICE vehicle being replaced in the fleet" is necessary to establish that all the information submitted in the application applies to the existing vehicle being replaced.

25. Section 2013.2(d)(2)(B). ZEV Purchase Exemption Application.

Purpose

The purpose of the changes in this section is to establish which entities a fleet owner can obtain documentation from to meet the requirements for the ZEV Purchase Exemption to show their good faith effort to attempt to find replacement ZEVs that are available to purchase. A fleet owner may submit information from authorized dealers instead of directly from the manufacturer. Additionally, the changes specify that the manufacturer or dealer the fleet owner seeks documentation from must sell ZEV or NZEV chassis or complete vehicles in the same or next higher weight class as the vehicle being replaced. Next, the changes specify that the documentation must state the entity does not offer for sale a ZEV or NZEV in the same or next higher weight class and of the same body configuration as the vehicle being replaced. Finally, the language specifies that fleet owners may go to ICE vehicle manufacturers or dealers if no manufacturer or dealer are offering ZEV or NZEV chassis of the same or next higher weight class.

Rationale

This change is necessary to provide fleet owners additional flexibility in obtaining required documentation to demonstrate the fleet owner did their due diligence in seeking available ZEV or NZEVs to meet the regulation's requirements. Stakeholders have indicated that they are

more likely to have relationships with authorized dealers and that obtaining documentation directly from manufacturers can be burdensome.

The change to require fleet owners seek entities that provide ZEV or NZEV chassis in the same or next higher weight class closes a loophole by which fleet owners could seek out manufacturers they know do not provide ZEV or NZEVs in the same or next higher weight class, thereby avoiding the requirement that they make a reasonable effort to find ZEVs. Using the same or next higher weight class conforms with existing criteria CARB would use to assess ZEV availability. The change to require the documentation to state the entity does not offer ZEV or NZEV in the same or next higher weight class and of the same body configuration also conforms to the criteria CARB uses when assessing the exemption, so these changes would streamline exemption application processing by ensuring documentation provided is relevant to the vehicle type being replaced and conforms with existing criteria in the regulation.

26. Section 2013.2(d)(2)(D)1. ZEV Purchase Exemption Application.

Purpose

The purpose of the change in this section is to point to the CCR section which contains the zero-emission powertrain certification requirements rather than the test procedure which those regulations refer to.

Rationale

This change is necessary to ensure that the zero-emission powertrain certification program in its entirety is met by the vehicle manufacturer for a ZEV to be considered available to purchase, not just the test procedure document. Other requirements, including warranty standards, were not included in the original citation. This will facilitate consumer protection from purchasing ZEVs from companies that might not warrant their vehicles or provide detailed information important to the consumer in making their purchase decisions.

27. Section 2013.2(d)(2)(F). ZEV Purchase Exemption Application.

Purpose

The purpose of this change is to add language specifying configurations will be added to the ZEV Purchase Exemption List as specified in section 2013.2(d)(1) if the configuration is included in section 2013.2(d)(1)(A).

Rationale

This change is necessary to establish that if a configuration cannot be identified as available, it will be added to the ZEV Purchase Exemption List only if the configuration is listed in the identified section. As explained in the original ACF FSOR, the streamlined list was not intended to have additional configurations added to it other than those originally listed. The vehicle configurations selected were determined to be the most common body types of the vehicles reported in the LER, which is explained in more detail in Chapter I.D. of the ACF ISOR. It is not feasible for every possible vehicle configuration that may not currently be available as a ZEV to be listed given the wide variety of specification combinations and customization options.

28. Section 2013.2(d)(3). ZEV Purchase Exemption Application

Purpose

The purpose of this change is to add a new subsection (3) which requires fleet owners to report which vehicles are being replaced, if applicable, pursuant to exemptions in sections 2013.2(d). Additionally, the changes would require fleet owners to remove those identified vehicles from the TRUCRS system and the California fleet within 30 calendar days of receiving the replacement vehicle.

Rationale

These changes are necessary to process exemption requests. Staff must be able to identify which vehicle is being replaced by the new ICE vehicle that the fleet owner was approved to purchase, and this change requires the fleet owner to provide that information as part of their annual report. The provision originally applied to the ZEV Purchase Exemption but was expanded to include the Daily Usage Exemption in section 2013.2(b). to ensure that this information is collected for the relevant exemptions.

The requirement that the replacement vehicle be removed from TRUCRS and the California fleet is necessary to conform with the requirement that the approved ICE purchase is replacing an existing vehicle, so therefore the original vehicle cannot continue to be kept in the reporting system or in service. The 30 calendar day timeframe is necessary for regulatory consistency with the timeframe requirements specified in section 2013.3(e) for other changes to an existing fleet and is a reasonable timeframe in which to report information to CARB to ensure timely reflection of compliance while balancing the burden of reporting for fleets.

29. Section 2013.2(d)(4). ZEV Purchase Exemption Application.

Purpose

The purpose of this change is to add a new subsection (4) which requires public agency utility that replace traditional utility-specialized vehicles under this exemption using the early access provision must consider ePTO in solicitation for bids for the replacement vehicle if it is configured to perform work that can only be done while the vehicle is stationary.

Rationale

This change is necessary to require public agency utilities to consider the possible emissions reductions and cost savings that may be realized with ePTO systems, whereas without this requirement the fleet owner may not be aware of these potential benefits. This would also provide the opportunity for the public and the agency's board members to learn more about the emissions benefits of ePTOs so that they may be considered in future decisions and different applications. The purpose of adding the requirement to bid on ePTO for vehicles that primary do work while stationary is to shift the needle towards purchasing ZE technology that has a favorable total cost of ownership. Examples of vehicles that perform work while stationary include common aerial boom applications such as bucket trucks but exclude trucks configured as cement mixers and those commonly referred to as dump trucks that use PTO while the vehicles are in motion. The likelihood of stationary ePTO equipment realizing favorable payback periods during the lifetime of the equipment is much higher than for non-stationary applications.

30. Section 2013.2(e). Mutual Aid Assistance.

Purpose

The purpose of this change is to redirect the reference of the ZEV Purchase Schedule option to section 2013.1(f)(5) and reference of the ZEV Milestones option to section 2013.6(g)(6).

Rationale

This change is necessary to redirect the references of ZEV Purchase Schedule option to section 2013.1(f)(5) and ZEV Milestone option to its new section in 2013.6(g)(6) in order to ensure continuity and uniformity of the ACF regulation.

31. Section 2013.2 Authority Cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB 1594.

J. Title 13, Section 2013.3. State and Local Government Agency Fleet Reporting.

1. Section 2013.3(a). State and Local Government Fleet Reporting.

Purpose

The entire section was renumbered from 2013.2.

The purpose of this change is to include new sections 2013.1 and 2013.6.

Rationale

This change is necessary to include the new references for ZEV Purchase Schedule option to section 2013.1 and ZEV Milestone option to its new section 2013.6 in order to ensure continuity and uniformity of the ACF regulation

2. Sections 2013.3(c)(1)(H) and 2013.3(c)(1)(I). Fleet Reporting.

Purpose

The purpose of the changes in this section is to move the “and” to continue the list of criteria, redirect the reference of the ZEV Milestones option to section 2013.6, and remove the language “no longer be subject to the requirements specified in sections 2013, 2013.1, 2013.2, 2013.3, and 2013.4.

Rationale

This change is necessary to continue the list for subsequent criteria proposed to be added to the reporting requirements and to redirect the reference of ZEV Milestone option to its new section in 2013.6 in order to ensure continuity and uniformity of the ACF Regulation. It is necessary to remove reference to no longer being subject to the sections in this article to conform with the change of copying the ZEV Milestones Option into this article.

3. Section 2013.3(c)(1)(J). Fleet Reporting.

Purpose

The purpose of the change is to add a new subsection (J) with a reporting requirement to identify whether the fleet owner is a public agency utility.

Rationale

This change is necessary for staff to verify whether the fleet owner is eligible for flexibilities added to the regulation pursuant to the requirements of AB 1594.

4. Section 2013.3(c)(1)(K). Fleet Reporting.

Purpose

The purpose of this change is to add a new subsection (K) with a reporting requirement to identify whether the fleet owner is a waste or wastewater fleet owner if using the ZEV Milestones Option and to reference the section where the definition for these terms can be found.

Rationale

This change is necessary for staff to verify whether the fleet owner is eligible for the ZEV Milestones-specific provision that was moved into section 2013.6.

5. Section 2013.3(c)(2)(J). Vehicle Information.

Purpose

The purpose of the change in this section is to add the requirement that the owner must also annually report if the vehicle in their fleet meets the definition of a traditional utility-specialized vehicle.

Rationale

This change is necessary for staff to verify if the reported vehicle meets the definition of a traditional utility-specialized vehicle and therefore if the vehicle would be eligible for the flexibility provisions provided by AB 1594. CARB staff uses this annual reporting information for compliance determination. CARB staff may verify the reported information and may use it to help a fleet with compliance questions.

6. Section 2013.3(c)(2)(N). Exemption Reporting.

Purpose

The purpose of these changes is to add a requirement that fleet owners identify which vehicles are being replaced within 30 calendar days of purchase, if applicable, pursuant to exemptions in sections 2013.2(b) and 2013.2(d). Additionally, the changes would require fleet owners to remove those identified vehicles from the TRUCRS system and the California fleet within 30 calendar days of receiving the replacement vehicle.

Rationale

These changes are necessary to process exemption requests. Staff must be able to identify which vehicle is being replaced by the new ICE vehicle that the fleet owner was approved to purchase, and this change requires the fleet owner to provide that information as part of their annual report. The provision originally applied to the ZEV Purchase Exemption but was

expanded to include the exemptions in sections 2013.2(b) and 2013.2(d) to ensure that this information is collected for the relevant exemptions. These changes are also necessary so staff can identify which vehicles are being replaced to ensure the fleet owner's reporting account can reflect compliance as they await delivery of the vehicle they purchased under an exemption. The 30 calendar day deadline is necessary for regulatory consistency with the timeframe requirements specified in section 2013.3 for other changes to an existing fleet and is a reasonable timeframe in which to report information to CARB to ensure timely reflection of compliance while balancing the burden of reporting for fleets.

The requirement that the replacement vehicle be removed from TRUCRS and the California fleet is necessary to conform with the requirement that the approved ICE purchase is replacing an existing vehicle, so therefore the original vehicle cannot continue to be kept in the reporting system or in service. The 30 calendar day timeframe is for regulatory consistency with the timeframe requirements specified in section 2013.3 for other changes to an existing fleet and is a reasonable timeframe in which to report information to CARB to ensure timely reflection of compliance while balancing the burden of reporting for fleets.

7. Section 2013.3(c)(2)(O). Vehicle Information.

Purpose

The purpose of this change is to add a new subsection (O) to include a requirement that fleet owners identify whether the vehicle is replacing another vehicle that was in an accident and is non-repairable.

Rationale

This change is necessary for staff to identify which vehicle has replaced the non-repairable vehicle and ensure the fleet owner's reporting account reflects compliance if using the provision. This conforms with the proposed changes to the provision to allow fleet owners to purchase a used replacement vehicle if eligible prior to requesting the exemption.

8. Section 2013.3(c)(2)(P). Vehicle Information.

Purpose

The purpose of this change is to add a new subsection (P) into which the requirement to report whether the vehicle has a heavy front axle is copied. The language specifies it only pertains to fleets using the ZEV Milestones Option and is copied to conform with the change of copying the ZEV Milestones Option into section 2013.6. Language was added to reference the definition for "heavy front axle" can be found in section 2013.6(b).

Rationale

This change is necessary to conform with the change copying the ZEV Milestones Option into section 2013.6.

9. Section 2013.3(d). Joint Compliance Reporting.

Purpose

The purpose of the change in this section is to remove the generic term "CARB issued ID" and replace it with "TRUCRS identification." The reference for Joint Compliance has been moved from 2013(k) to 2013(g).

Rationale

This change is necessary to conform with other similar changes throughout the regulation language changing “CARB-issued ID” to “TRUCRS identification”, as well as to redirect the reference of Joint Compliance to its new section in 2013(g) in order to ensure continuity and uniformity of the ACF regulation.

10. Section 2013.3(f). Odometer Reading Reporting.

Purpose

The purpose of the change in this section is to modify the odometer reading reporting requirements to apply to fleet owners with backup vehicles or ICE vehicle tractors purchased pursuant to the ZEV Purchase, Daily Usage, or Mutual Aid exemptions owned by fleet owners using the ZEV Milestones Option, and to add language specifying such fleet owners with those specific vehicles must follow the specified reporting requirements for such vehicles.

Rationale

This change is necessary to expand the odometer reporting requirements beyond backup vehicles to vehicles that would be subject to being removed at the end of the vehicle’s minimum useful life to conform with the change of copying the ZEV Milestones Option into section 2013.6. It is necessary to limit the requirements to only tractors because tractors are the only vehicles likely to exceed useful life on a mileage basis rather than vehicle model year. Requiring the reporting at 12 years of age or older is necessary to identify by the 13th year whether the vehicle will exceed the 800,000-mile useful life limitation and thus would need to be removed from the fleet, and for staff to have sufficient information to implement this requirement.

11. Section 2013.3(g). Exemption ICE Purchase Supporting Documentation Reporting.

Purpose

The purpose of this change is to add language expanding the existing reporting requirement to vehicles bought under the daily usage exemption.

Rationale

This change is necessary to set forth requirements for documentation submission to show that the ICE vehicle purchased pursuant to the exemption is the same weight class and configuration of the vehicles that was not available to purchase as a ZEV or NZEV.

12. Section 2013.3(l). Vehicle Delivery Delay Reporting.

Purpose

The purpose of these changes is to copy the Vehicle Delivery Delay Reporting requirement over from Section 2015.4(g) to 2013.3(l) to conform with copying the ZEV Milestones Option

into section 2013.6. The purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[86,87,88]

Rationale

These changes redirect the reference of ZEV Milestone option to its new section in 2013.6 in order to ensure continuity and uniformity of the ACF Regulation.

13. Section 2013.3 Authority Cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB1594.

K. Title 13, Section 2013.4. State and Local Government Agency Fleet Recordkeeping

1. Section 2013.4(g). Hiring Entity Documentation.

Purpose

The entire section was renumbered from 2013.3.

The purpose of this change is to move the hiring entity documentation requirement to section 2013.7.

Rationale

This change is necessary to redirect the references of Hiring Entity Requirement to section 2013.7 to ensure continuity and uniformity of the ACF regulation.

2. Section 2013.4(g). Daily Usage Exemption Documentation.

Purpose

The purpose of this change is to add language expanding the existing documentation requirement to include records required to be submitted pursuant to section 2013.3(g), Exemption ICE Purchase Supporting Documentation Reporting.

---

[86] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[87] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[88] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

Rationale

This change is necessary to ensure CARB staff have documentation to audit in case of a discrepancy between the ICE vehicle ordered and received and the ICE vehicle that was replaced under the granted exemption.

3. Section 2013.4(k). Vehicle Delivery Delay Documentation.

Purpose

The purpose of this change is to add a new subsection (k) into which the recordkeeping requirements for the vehicle delivery delay provision are copied from section 2015.5(d) of High Priority Fleets into section 2013.6(h).

Rationale

This change is necessary to conform with changes related to the repeal of section 2015 and associated move of the ZEV Milestones Option into section 2013.6(h), and to ensure uniformity and continuity of the ACF regulation.

4. Section 2013.4(l). Traditional Utility Specialized Vehicle Early Access Documentation.

Purpose

The purpose of the addition of this section is to add the requirement that owners who utilize the Traditional Utility-Specialized Vehicle Early Access of section 2013.1(g)(1) must keep documentation as specified in section 2013.4(c) to substantiate the vehicle's odometer readings, or must keep records of the vehicle's engine hour meter readings as recorded in maintenance or service work orders, invoices or receipts, unaltered photographs of the vehicle engine hour meter device, driver logs or inspection sheets, or onboard diagnostics system information downloads that include the vehicle's engine hour information to substantiate the vehicle's engine hour meter readings. Fleet owners who utilize the Traditional Utility-Specialized Vehicle Early Access of section 2013.1(g)(2) must keep records of the attestation submitted and the written replacement criteria plan, policy or document established by the fleet owner's governing board, chief executive, or the chief executive's designee. Fleet owners approved to utilize the Traditional Utility-Specialized Vehicle Early Access of section 2013.1(g) must keep the solicitation of bids for the replacement traditional utility–specialized vehicle specified in section 2013.1(g)(3).

Rationale

This change is necessary to specify the necessary documentation that must be kept by public agency utility owners about their traditional utility-specialized vehicles for auditing purposes.

5. Section 2013.4(m). Waste and Wastewater Fleet Option Documentation.

Purpose

The purpose of this change is to add a new subsection (m) into which the recordkeeping requirements of the Waste and Wastewater Fleet Option were copied from 2015.5(m). The purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[89,90,91]

Rationale

This change is necessary to conform with changes related to the repeal of section 2015 and associated move of the ZEV Milestones Option into section 2013.6, and to ensure uniformity and continuity of the ACF regulation.

6. Section 2013.4 Authority Cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB 1594.

L. Title 13, Section 2013.5 State and Local Government Agency Fleet Enforcement.

1. Section 2013.5(b)

Purpose

The entire section was renumbered from 2013.4.

The purpose of the change is to change reference for the renumbered section 2013.2 to 2013.3.

Rationale

Numbering revisions are due to the repeal of sections 2015 through 2015.6 and associated move copy of the ZEV Milestones Option and related provisions into this article.

2. Section 2013.5 Authority Cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

---

[89] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[90] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[91] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB 1594

M. Title 13, Section 2013.6, State and Local Government Agency ZEV Milestones Option

1. Section 2013.6 ZEV Milestones Option.

Purpose

The purpose of this change is to add a new section 2013.6 and to copy in the relevant text of the ZEV Milestones Option from section 2015.2. The purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[92,93,94]

Rationale

The change of moving over the ZEV Milestones Option section from the HPF regulation order is necessary to provide continuity and integrity of the SLG Fleets regulation due to the proposed repeal of sections 2015 through 2015.6, making it a standalone document. This change also makes it easier for the reader to follow by taking into account that some SLG fleets are already using, or have the option until January 1, 2030, to switch to, this optional compliance schedule. Some provisions were not moved over because they are not relevant to SLG fleets; these provisions include five-day pass, declared emergency response, and rental fleet option. Any sections not copied over or that were modified from original text in 2015.2 are discussed below in further detail.

2. Section 2013.6(a). ZEV Milestones Option

Purpose

The purpose of this change is to copy over the first paragraph from 2015.2 into a new section of 2013.6(a) while omitting the first sentence in the paragraph:

“Until January 1, 2030, fleet owners may choose this option in lieu of the ZEV Purchase Schedule Requirements of section 2013.1 to have the flexibility to manage their California fleet while meeting the ZEV Fleet Milestones regardless of vehicle age and mileage”.

Another purpose of the change is to add the phrase “that are guaranteed a minimum useful life” to the end of the newly established section 2013.6(a).

---

[92] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[93] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[94] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

Rationale

This change is necessary to provide continuity and integrity of the ACF SLG Fleets regulation due to the proposed repeal of sections 2015 through 2015.6.

The deletion of the first sentence is necessary as it delivers a similar or duplicative message to that in 2013(e).

The incorporation of the text “that are guaranteed a minimum useful life” at the end of section 2013.6(a) is necessary to distinguish vehicles guaranteed a minimum useful life from those that are included in the waiver of the provisions of Health and Safety Code section 43201(a).

3. Section 2013.6(a)(1). Zero-Emission Airport Shuttle Bus

Purpose

The purpose of this change is to add a new subsection (a)(1) into which to copy over the “Airport Shuttle Bus Fleet Exemption” provision originally existed in section 2015(s), to add “that elect to use the ZEV Milestones Option of 2013.6” in front of “may exclude”, and to modify language specifying from which sections of this regulation such vehicles would be excluded.

Rationale

The change to copy over the “Airport Shuttle Bus Fleet Exemption” provision is necessary as it provides continuity and integrity of the SLG regulation due to the proposed repeal of sections 2015 through 2015.6. This change helps establish that California fleets that have vehicles subject to the Zero-Emission Airport Shuttle Bus regulations are allowed to exempt those vehicles from the requirements of ZEV Milestones section 2013.6 until January 1, 2027. Adding the phrase “that elect to use the ZEV Milestones Option of section 2013.6” before “may exclude” is necessary to establish that only fleets complying with the ZEV Milestones Option are permitted to exclude vehicles in their California fleet from the requirements of sections 2013 and 2013.2 through 2013.6 until January 1, 2027 if those vehicles are already regulated under the Airport Shuttle Bus regulations. Replacing “those regulations” with “the Zero-Emission Airport Shuttle regulations” after “subject to” is necessary to establish that only vehicles subject specifically to the Zero-Emission Airport Shuttle regulations may be excluded from the requirements of sections 2013 and 2013.2 through 2013.6.

4. Section 2013.6(b). Definitions

Purpose

The main purpose of this change is to copy over the definitions in 2015(b) that pertain exclusively to the ZEV Milestones Option to section 2013.6(b). Definitions of “Day cab tractor,” “Heavy front axle,” “Milestone Group 2,” “Milestone Group 3,” “Minimal useful life,” “Sleeper

cab tractor," "Specialty vehicle," and "Wastewater fleet" remain the same and the purpose and rationale for these definitions can be referenced in the 2022 ISOR.[95,96,97]

The definitions of "Milestone Group 1," "Waste Fleet," and "Work Truck" have been revised by omitting certain portions of the original text. These changes include omitting "the light-duty package delivery vehicles" from the definition of "Milestone Group 1," omitting "light-duty package delivery vehicle" from the definition of "Work Truck," and removing the text of "a fleet owner that is contracted with" from the definition of "Waste fleet."

Rationale

Copying over these definitions is necessary to conform with moving and incorporating the ZEV Milestones Option provisions into the SLG regulation. This change preserves continuity and upholds the integrity of the ACF SLG Fleets regulation due to the proposed repeal of sections 2015 through 2015.6.

The omissions of "the light-duty package delivery vehicles" from the definition of "Milestone Group 1" and "light-duty package delivery vehicle" from the definition of "Work Truck" are necessary because this vehicle category was originally included based on provisions applicable to high-priority and federal fleets, which do not apply to SLG fleets. This change simplifies the regulation without altering the scope of the ACF SLG Fleets regulation and is not anticipated to affect emissions. Removing the phrase "a fleet owner that is contracted with" from the definition of "Waste fleet" is necessary, as it does not pertain to government fleets that do not contract with other municipalities to serve their own service territory.

5. Section 2013.6(c) and (c)(1). ZEV Milestones

Purpose

The purposes of the changes in this section are to add the word "year" after "The ZEV Milestone percentages must be maintained each year until the next compliance milestone". Other changes are to omit "light-duty package delivery vehicles" from Milestone Group 1 in Table A, and to restate the "NZEV flexibility" provision from section 2013(f) within section 2013.6(c)(1).

Rationale

The addition of the word "year" is necessary to establish that the compliance milestones must be maintained on a yearly basis and to avoid confusion or misinterpretation.

---

[95] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[96] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[97] CARB, August 4, 2023, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

The omission of the “light-duty package delivery vehicles” from Milestone Group 1 is necessary to reflect the definition change in 2013.6(b) and its reference in Table A: ZEV Milestones by Milestone Group and Year.

The repetition of the “NZEV flexibility” description in 2013.6(c)(1) is necessary and intended to maintain continuity with the ACF SLG Fleets regulation. It ensures that fleets using the ZEV Milestones Option will count NZEVs the same as ZEVs as allowed in the original version of the ZEV Milestones Option and to conform with the change of copying the ZEV Milestones Option into this section of the regulation.

6. Section 2013.6(g). ZEV Milestone Exemptions and Extensions

Purpose

The purpose of this change is to copy the ZEV Milestones Option exemptions and extensions specified in 2015.2(f) and include them under a new section 2013.6(g) that fleet owners may apply for or utilize, and to establish how each of these exemptions and extensions may affect compliance calculations under section 2013.6(d). Provisions of “Backup Vehicle Exemption”, “ZEV Infrastructure Delay Extension”, and “Intermittent Snow Removal Vehicles” remain the same and the purpose and rationale for these provisions can be referenced in the 2022 ISOR.[98,99,100]

The “Declared Emergency Response” provision (section 2015.2(f)(6)) was not moved over to section 2013.6(g).

The “Five-day Pass” provision (section 2015.2(f)(8)) was not moved over to section 2013.6(g).

The timeframe during which the fleet owners may request and obtain “Daily Usage Exemption” specified in 2013.6(g)(2) has been revised from “no later than one year before the next applicable upcoming ZEV Milestone compliance date specified in section 2013.6(c)” to “no later than one year and no earlier than two years before the next applicable upcoming ZEV Milestone compliance date specified in section 2013.6(c).

The deadline for requesting the “Vehicle Delivery Delay Extension” was revised from “no later than February 1 of the same calendar year as the next applicable ZEV Milestone compliance date specified in section 2013.6(c)” to “no later than April 1 of the same calendar year as the next applicable ZEV Milestone compliance date specified in section 2013.6(c)”.

The timeframe during which the fleet owners may request and obtain “ZEV Purchase Exemption” specified in 2013.6(g)(5) has been revised from “no later than one year before the next applicable upcoming ZEV Milestone compliance date specified in section 2013.6(c)” to

---

[98] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).

[99] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).

[100] CARB, August 4, 2023, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf, last accessed May 16, 2025).

“no later than one year and no earlier than two years before the next applicable upcoming ZEV Milestone compliance date specified in section 2013.6(c).

Rationale

This change of copying over these exemptions and extensions from 2015.2(f) is necessary to conform with moving and incorporating the ZEV Milestones Option into the ACF SLG Fleets regulation and provide continuity to the regulation due to the proposed repeal of sections 2015 through 2015.6.

The “Declared Emergency Response” exemption was developed to address HPF’s use of trucks from out-of-state during a declared emergency event. SLG fleets are not expected to utilize out-of-state vehicles, therefore this exemption is not applicable.

The “Five-day Pass” exemption was developed to address the limited use of out-of-state fleets operating in California. SLG fleets are not expected to utilize out-of-state vehicles, therefore this exemption is not applicable.

The revised timeframe for requesting the “Daily Usage Exemption” establishes a more defined window for both fleet owners and CARB. This change gives fleet owners sufficient time to submit their application while it helps ensure they do not miss the opportunity to identify suitable ZEVs that may be entering the market recently and submit the application prematurely. This more defined timeframe also enables CARB to better evaluate exemption applications by reducing the risk of approving requests submitted too early—when suitable ZEVs may soon become available to meet the fleet’s daily usage needs.

The deadline for requesting the “Vehicle Delivery Delay Extension” was modified to align with the SLG fleet reporting deadline which is April 1 of each year to make the reporting date the same regardless of which compliance method is used.

The revised timeframe for requesting the “ZEV Purchase Exemption” establishes a more defined window for both fleet owners and CARB. This change gives fleet owners sufficient time to submit their application while it helps ensure they do not prematurely submit exemption applications just before suitable ZEVs become available for purchase.

7. Section 2013.6(h). Vehicle Delivery Delay Extension

Purpose

The purpose of this change is to copy over the “Vehicle Delivery Delay Extension” requirements from 2015.3(d) into the SLG Fleets regulation order as a new section of

2013.6(h). Change was made to section 2013.6(h)(1)(B)(3) but all other text remains the same and the purpose and rationale can be referenced in the 2022 ISOR.[101,102,103]

In Section 2013.6(h)(1)(B)(3), the following language was not copied over from 2015.3(d)(1)(B)(3): “or ICE vehicle removal date for a vehicle that must be removed from the California fleet per the Model Year Schedule section 2015.1(b). If the order was placed before January 1, 2024, the purchase agreement must show the order was placed on or before October 1, 2023.”

In Section 2013.6(h)(2), the following text was deleted from the “Manufacturer Cancellation” provision: “180 calendar days of the cancellation, except for government fleet owners who must secure another purchase agreement within.”

Rationale

The change of moving over the “Vehicle Delivery Delay Extension” provision is necessary to conform with moving and incorporating the ZEV Milestones Option into the SLG Fleet regulation and provide integrity of the SLG Fleets regulation due to the proposed repeal of sections 2015 through 2015.6, making it easier for the reader to follow. Under the ZEV Milestones Option, fleet owners may count a replacement vehicle as a ZEV for compliance purposes if a new ZEV was ordered at least one year prior to the compliance date of the internal combustion engine vehicle being replaced, and the new ZEV is not delivered by the compliance deadline due to circumstances beyond the control of the fleet owner.

The partial deletion of 2015.3(d)(1)(B)(3) is necessary because the deleted portion is not applicable to SLG fleets as these fleets cannot comply with the Model Year Schedule.

The deletion of “180 calendar days of the cancellation, except for government fleet owners who must secure another purchase agreement within” from Section 2013.6(h)(2) is necessary to maintain consistency of the regulation while limiting the provision’s applicability to SLG fleets. In addition, allowing one year for SLG fleets to secure another purchase agreement for a ZEV is considered reasonable.

8. Section 2013.6 Authority Cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

---

[101] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf,* last accessed May 16, 2025).
[102] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[103] CARB, August 4, 2023, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

Rationale

This change is necessary because Vehicle Code section 28500 specifies the requirements of AB 1594.

I. Title 13, Section 2013.7. Hiring Compliant Fleets

1. Section 2013.7. Hiring Compliant Fleets

Purpose

The purpose of this change is to move all applicability and requirements related to hiring compliant fleets from 2013(a)(2) into a new section 2013.7. Only new purpose and rational are discussed, the purpose and rationale for the ACF rulemaking can be referenced in the 2022 ISOR.[104,105,106]

Rationale

This change is necessary to combine the applicability; general and recordkeeping requirements related to hiring compliant fleets into a stand-alone section for ease of readability.

2. Section 2013.7(a)(1). Scope and Applicability. Hiring Entities.

Purpose

The purpose of the conforming change to remove “this article” is to consolidate language for ease of readability. The purpose of the change to remove “hires and operates” and replace “directs the operation of” with “dispatches” is to provide clarity.

Rationale

The conforming change to remove “this article” is necessary because a new subsection (A) was added to replace section 2013(j).

The changes to remove “hires and operates” was removed because it is superfluous, and the change to replace “directs the operation of” to “dispatches” is necessary to exclude entities that are not fleets. The applicability criteria were intended to be narrower and only apply to scenarios where hiring entities are dispatching (as defined in the regulation) hired fleets rather than more broadly interpreted as “directing the operation” which could include other businesses besides fleets.

---

[104] CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-1: Purpose and Rationale for State and Local Government Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph1.pdf*, last accessed May 16, 2025).
[105] CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf,* last accessed May 16, 2025).
[106] CARB, August 4, 2023, Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).

3. Section 2013.7(a)(1)(A). Scope and Applicability. Hiring Entities.

Purpose

The purpose of this change is to add (A) Title 13, California Code of Regulations (CCR) sections 2013 through 2013.6 to replace section 2013(j).

Rationale

This change is necessary to conform with the move and replace reference with new reference to Title 13, CCR sections 2013 through 2013.6, for readability.

4. Section 2013.7(b). Definitions

Purpose

The main purpose of this change is to move the definitions from 2013(b) that pertain to Hiring Compliant Fleets to section 2013.7(b). Definitions of “Broker,” “Motor carrier,” “Vehicle,” remain the same. The definition of “Dispatch” has been revised by adding the word “specific” in front of “vehicle.”

Rationale

Moving over these definitions is necessary to conform with moving and incorporating all applicability and requirements related to hiring compliant fleets into the new section 2013.7 which ensures all applicable definitions are referenced in the same section.

The addition of the word “specific” in front of “vehicle” is necessary to ensure that the definition only applies to dispatching a specific vehicle rather than generally providing direction or instructions about completing a task that requires the use of vehicles in a fleet. This ensures that the definition applies only when a fleet owner directs the routing of a particular vehicle, not when issuing broad guidance such as a contract that specifies the areas to service by a garbage truck fleet or a contract that outlines when and where road repair activities need to be made.

5. Section 2013.7(c). Requirement to Hire Compliant Fleets, Verification of Compliance.

Purpose

The purpose of this change is to move previous section 2013(j) to a separate, stand-alone section and make conforming change to the new section numbers.

Rationale

This change is necessary to move all hiring compliant fleets requirements into section 2013.7 for ease of readability.

6. Section 2013.7(c)(2). Requirement to Hire Compliant Fleets, Disclosure of Regulation Applicability.

Purpose

The purpose of this change is to remove “light-duty package delivery vehicles” and “Advanced Clean Fleets” from the original Disclosure of Regulation Applicability language.

Rationale

This change is necessary to remove “light-duty package delivery vehicles” to match the vehicle scope stated in 2013(a)(2). The removal of “Advanced Clean Fleets” is necessary to broaden the disclosure statement to include other CARB regulations with a similar disclosure requirement.

7. Section 2013.7(d) Hiring Entity Documentation

Purpose

The purpose of this change is to and consolidate the recordkeeping requirements moved from previous section 2013.3(g) to the new section 2013.7(d). Conforming changes were made to replace reference 2013(a)(3) with title 13, CCR, section 2013 through 2013.7 and 2013(j)(2) with 2013.7(c)(2).

Rationale

This change was made for ease of readability.

8. Section 2013.7 Authority cited

Purpose

The purpose of this change is to add section 28500 Vehicle Code to the authority cited.

Rationale

This change is necessary because section 28500 Vehicle Code specifies the requirements of AB 1594.

N. Title 17, Section 95486.3. Low Carbon Fuel Standard Amendments

Purpose

Staff are proposing to modify the derating factors for LMD-HRI crediting within the LCFS regulation. Hydrogen refueling stations approved for HRI crediting receive credits for their unused refueling capacity, in addition to credits generated for dispensing fuel to fuel cell electric vehicles. Staff proposes to reduce the derating factor, such that LMD-HRI stations may receive HRI credits for the full nameplate capacity (up to 1200 kilograms per day) for public stations, and 50% of the nameplate capacity for private stations.

Rationale

This change will provide stronger crediting support for hydrogen stations and more adequately support development of stations that can accommodate the refueling demand of larger medium-duty hydrogen fuel cell electric vehicles. The HRI provision has provided significant support for the hydrogen refueling network in California since its addition in 2019, and this minor change will encourage development of stations adequately sized for medium-duty vehicles, many of which are likely to utilize light-duty refueling infrastructure. The change will not increase the total HRI credits generated by the HRI program in aggregate, due to an existing cap on program-wide HRI crediting.

V. Benefits Anticipated from the Regulatory Action, Including the Benefits or Goals Provided in the Authorizing Statute

Because staff are proposing two significant concurrent changes, the effects on emissions and health benefits will be discussed in two ways. First, the effects of the Proposed Amendments are evaluated on a statewide basis. Second, the impact of the Proposed Amendments are evaluated specifically to public agency utility fleets.

Staff determined that the SLG portion of the ACF regulation alone would not result in more ZEV sales than already expected in the original baseline conditions in any year as the ZEV purchase requirements of the SLG component of the ACF regulation never exceeds the ZEV sales requirements under the ACT regulation. Therefore, the effect of the proposed changes including the Proposed Repeal means that all of the emissions benefits and health benefits originally estimated in Chapter II and III of the 2022 ISOR for the Advanced Clean Fleets regulation would not be achieved.[107] The remainder of this chapter demonstrates the effects of Proposed SLG Amendments on public agency utilities.

A. Health Benefits

The Proposed SLG Amendments are expected to reduce NOx and $PM_{2.5}$ emissions in California compared to the Section 100 baseline (described below in Chapter VI(B)), resulting in health benefits. CARB analyzed the value of health benefits associated with 12 health outcomes including: cardiopulmonary mortality, acute myocardial infarction, lung cancer incidence, asthma onset, asthma symptoms, hospitalizations for cardiovascular illness, hospitalizations for respiratory illness, hospitalizations for Alzheimer's disease, hospitalizations for Parkinson's disease, cardiovascular emergency department visits, respiratory emergency department visits, and work loss days.[108]

These health outcomes have been identified by U.S. EPA as having a causal or likely causal relationship with exposure to particulate matter of 2.5 micrometers of smaller ($PM_{2.5)}$ based on a substantial body of scientific evidence.[109,110] U.S. EPA has determined that both long-term and short-term exposure to $PM_{2.5}$ plays a causal role in premature mortality, meaning that a substantial body of scientific evidence shows a relationship between $PM_{2.5}$ exposure and increased risk of death. This relationship persists when other risk factors such as smoking rates, poverty, and other factors are considered. U.S. EPA has also determined a causal relationship between non-mortality cardiovascular effects (e.g., acute myocardial infarction)

---

[107] CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, Appendix B: Updated Costs and Benefits Analysis (weblink: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15db.pdf*, last accessed March 27, 2025).

[108] CARB, Updated Health Endpoints Bulletin, November 2022, (web link: https://ww2.arb.ca.gov/sites/default/files/2022-11/California%20Air%20Resources%20Board%20Updated%20Health%20Endpoints%20Bulletin%20-%20Edited%20Nov%202022_0.pdf, last accessed November 18, 2024).

[109] U.S. Environmental Protection Agency, Integrated Science Assessment for Particulate Matter, Issue EPA/600/R-19/188, Pg 700-702, December 2019, (web link: https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=347534, last accessed November 18, 2024).

[110] U.S. Environmental Protection Agency, Technical Support Document (TSD) for the Final Revised Cross-State Air Pollution Rule Update for the 2008 Ozone Season NAAQS, March 202 (web link: https://www.epa.gov/sites/default/files/2021-03/documents/estimating_pm2.5-_and_ozone-attributable_health_benefits_tsd_march_2021.pdf, last accessed November 18, 2024).

and short- and long-term exposure to $PM_{2.5}$, a likely causal relationship between non-mortality respiratory effects (including worsening asthma) and short- and long-term $PM_{2.5}$ exposure, and a likely causal relationship between non-mortality neurological effects and long-term $PM_{2.5}$ exposure.[111]

CARB staff evaluated health impacts associated with exposure to $PM_{2.5}$ and NOx emissions from the Proposed SLG Amendments. NOx includes nitrogen dioxide, a potent lung irritant, which can aggravate lung diseases such as asthma when inhaled.[112] However, the most serious quantifiable impacts of NOx emissions occur through the conversion of NOx to fine particles of ammonium nitrate aerosols through chemical processes in the atmosphere. $PM_{2.5}$ formed in this manner is termed secondary $PM_{2.5}$. Both directly emitted $PM_{2.5}$ and secondary $PM_{2.5}$ are associated with adverse health outcomes**.** As a result, reductions in $PM_{2.5}$ and NOx emissions are associated with reductions in these adverse health outcomes.

1. Incidence-Per-Ton Methodology

CARB uses the incidence-per-ton (IPT) methodology to quantify the health benefits of emissions reductions in cases where dispersion modeling results are not available. A description of this method is included on CARB's webpage.[113] CARB's IPT methodology is based on a methodology developed by U.S. EPA.[114,115,116]

Under the IPT methodology, it is assumed that changes in emissions are approximately proportional to changes in health outcomes. IPT factors are derived by calculating the number of health outcomes associated with exposure to $PM_{2.5}$ for a Baseline scenario using measured ambient concentrations and dividing by the emissions of $PM_{2.5}$ or a precursor. The calculation is performed separately for each air basin using the following equation:

$$IPT = \frac{number\ of\ health\ outcomes\ in\ air\ basin}{annual\ emissions\ in\ air\ basin}$$

Multiplying the emissions reductions from the Proposed SLG Amendments in an air basin by the IPT factor then yields an estimate of the reduction in health outcomes achieved by the Proposed SLG Amendments. For future years, the number of outcomes is adjusted to account for population growth. CARB's current IPT factors are based on a 2014-2016 Baseline scenario, which represents the most recent data available at the time the current IPT factors

---

[111] U.S. Environmental Protection Agency, Integrated Science Assessment for Particulate Matter, Issue EPA/600/R-19/188, Pg 700-702, December 2019, (web link: https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=347534, last accessed November 18, 2024).
[112] United States Environmental Protection Agency, Integrated Science Assessment for Oxides of Nitrogen – Health Criteria, EPA/600/R-15/068, January 2016, (web link: http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=526855, last accessed November 18, 2024).
[113] CARB, ARB's Methodology for Estimating the Health Effects of Air Pollution, Retrieved March 13, 2023, (web link: https://ww2.arb.ca.gov/resources/documents/carbs-methodology-estimating-health-effects-air-pollution).
[114] Fann N, Fulcher CM, Hubbell BJ., The influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution, Air Quality, Atmosphere & Health, 2:169-176, June 2009, (web link: *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2770129/*).
[115] Fann N, Baker KR, Fulcher CM., Characterizing the PM2.5-related health benefits of emission reductions for 17 industrial, area and mobile emission sectors across the U.S. Environ Int.; 49:141-51, November 15, 2012. (web link: *https://www.sciencedirect.com/science/article/pii/S0160412012001985*).
[116] Fann N, Baker K, Chan E, Eyth A, Macpherson A, Miller E, Snyder J., Assessing Human Health PM2.5 and Ozone Impacts from U.S. Oil and Natural Gas Sector Emissions in 2025, Environ. Sci. Technol. 52 (15), pp 8095–8103, July 13, 2018, (web link: *https://pubs.acs.org/doi/abs/10.1021/acs.est.8b02050*).

were computed. IPT factors are computed for the two types of $PM_{2.5}$: primary $PM_{2.5}$ and secondary $PM_{2.5}$ of ammonium nitrate aerosol formed from precursors.

2. Updated Information on Health Impact Analysis

CARB has initiated an expanded health analysis to include additional health endpoints to provide a more comprehensive analysis of the benefits of the agency's plans and regulations. A description of the updated health outcomes was provided in CARB's Updated Health Endpoints Bulletin, released November 2022.[117] This expansion was based on U.S. EPA's Technical Support Document (TSD) for the Final Revised Cross-State Air Pollution Rule Update for the 2008 Ozone Season National Ambient Air Quality Standards (NAAQS) and is associated with U.S. EPA's Environmental Benefit Mapping and Analysis Program – Community Edition (BenMAP- CE) version 1.5.8.[118]

To derive the IPT factors for each of the health endpoints, the number of health outcomes associated with exposure to $PM_{2.5}$ were calculated by inputting $PM_{2.5}$ concentrations from air monitoring data into U.S. EPA's BenMAP-CE version 1.5.8.4 (released April 16, 2021). The baseline incidence datasets embedded in the BenMAP-CE software were used; the incidence data for mortality, hospital admissions (including myocardial infarctions), and emergency department visits were at the county-level, while the incidence data for work loss days was provided at the national rate in the software.[119]

For most of the health endpoints, the U.S. EPA had identified one effect estimate derived from one study to be used in the respective health impact function. However, for myocardial infarction and respiratory emergency department visits, the U.S. EPA had identified multiple effect estimates; thus, U.S. EPA's health impact functions for these two endpoints were estimated using pooling methods. Pooling combines multiple risk estimates to determine a summary mean value estimate and associated confidence intervals.[120] For the myocardial infarction endpoint, the results were pooled from four different epidemiological studies using the random or fixed effects pooling and sum dependent pooling methods, as specified in the configuration file that U.S. EPA uses for PM quantification. For respiratory emergency department visits, the results were pooled from analyses across four different locations in the U.S. done in one study; this pooling using the random or fixed effects method, also as specified in U.S. EPA's configuration file.

---

[117] CARB, Updated Health Endpoints Bulletin, (web link: *https://ww2.arb.ca.gov/sites/default/files/2022-11/California%20Air%20Resources%20Board%20Updated%20Health%20Endpoints%20Bulletin%20-%20Edited%20Nov%202022_0.pdf*, retrieved November 2022).

[118] United States Environmental Protection Agency, Technical Support Document (TSD) for the Final Revised Cross-State Air Pollution Rule Update for the 2008 Ozone Season NAAQS: Estimating PM2.5- and Ozone-Attributable Health Benefits (EPA-HQ-OAR-2020-0272), March 2021, (web link: *https://www.epa.gov/sites/default/files/2021-03/documents/estimating_pm2.5-_and_ozone-attributable_health_benefits_tsd_march_2021.pdf*, retrieved April 3, 2023).

[119] United States Environmental Protection Agency, Environmental Benefits Mapping and Analysis Program - Community Edition: User's Manual, March 2023, (web link: *https://www.epa.gov/sites/default/files/2015-04/documents/benmap-ce_user_manual_march_2015.pdf?VersionId=7BSmKIIr0O6KccspW4pA.nMsu4EeLIrt*, retrieved April 4, 2023).

[120] United States Environmental Protection Agency, Environmental Benefits Mapping and Analysis Program - Community Edition: User's Manual, March 2023, (web link: *https://www.epa.gov/sites/default/files/2015-04/documents/benmap-ce_user_manual_march_2015.pdf?VersionId=7BSmKIIr0O6KccspW4pA.nMsu4EeLIrt*, retrieved April 4, 2023).

3. Reduction in Adverse Health Impacts

These reductions in adverse health cases are expected to be seen across all ages in the state. Children will benefit from the reduced cases of asthma onset and symptoms due to the Proposed SLG Amendments. This may lead to better health outcomes in these children when they become adults since studies have shown that childhood asthma puts individuals at greater risk for respiratory disease and lower respiratory function in adulthood.[121,122] Adults are also expected to benefit from the Proposed SLG Amendments due to fewer lost workdays.

Table 4 summarizes the total number of incidents for all public health endpoints statewide that would be reduced from 2026 to 2029 for each scenario compared to Section 100 Baseline. Table 5 summarizes the air basin distribution of select avoided health endpoints for emission reductions under the Proposed SLG Amendments, for 2026 through 2029 in California, relative to Section 100 Baseline. All other endpoints are included in the statewide totals presented as Table 4.

Table 4. Statewide Avoided Mortality and Morbidity Incidents from 2026 to 2029 under all Scenarios

Health Endpoint	Proposed SLG Amendments	Alternative 1	Alternative 2
Asthma symptoms	6 (-3 - 15)	-1 (0 - -2)	7 (-3 - 17)
Work Loss Days	4 (3 - 5)	0 (0 - 0)	5 (4 - 5)

Notes: Totals may differ due to rounding. Numbers in parentheses throughout this table represent the 95% Confidence Interval. Health endpoints with no incidents are not tabulated.

Table 5. Avoided Asthma Symptoms and Work Loss Days from 2026 to 2029 Under the Proposed SLG Amendments by Air Basin

Health Endpoint	Asthma Symptoms Avoided	Work Loss Days
Sacramento Valley	0 (0 - 1)	0 (0 - 0)
Salton Sea	0 (0 - 0)	0 (0 - 0)
San Diego County	0 (0 - 1)	0 (0 - 0)
San Francisco Bay	1 (0 - 2)	0 (0 - 1)
San Joaquin Valley	1 (0 - 1)	0 (0 - 0)

[121] Sears MR, Greene JM, Willan AR, Wiecek EM, Taylor DR, Flannery EM, Cowan JO, Herbison GP, Silva PA, Poulton R., A longitudinal, population-based, cohort study of childhood asthma followed to adulthood. N Engl J Med. 2003 Oct 9;349(15):1414-22. doi: 10.1056/NEJMoa022363. PMID: 14534334., (weblink: *https://pubmed.ncbi.nlm.nih.gov/14534334/*, last accessed December 3, 2024).

[122] McGeachie MJ, Yates KP, Zhou X, Guo F, Sternberg AL, Van Natta ML, Wise RA, Szefler SJ, Sharma S, Kho AT, Cho MH, Croteau-Chonka DC, Castaldi PJ, Jain G, Sanyal A, Zhan Y, Lajoie BR, Dekker J, Stamatoyannopoulos J, Covar RA, Zeiger RS, Adkinson NF, Williams PV, Kelly HW, Grasemann H, Vonk JM, Koppelman GH, Postma DS, Raby BA, Houston I, Lu Q, Fuhlbrigge AL, Tantisira KG, Silverman EK, Tonascia J, Weiss ST, Strunk RC., Patterns of Growth and Decline in Lung Function in Persistent Childhood Asthma, N Engl J Med. 374(19):1842-1852. doi: 10.1056/NEJMoa1513737. PMID: 27168434; PMCID: PMC5032024, May 12, 2016, Last accessed December 3, 2024.

Health Endpoint	Asthma Symptoms Avoided	Work Loss Days
South Central Coast	0 (0 - 0)	0 (0 - 0)
South Coast	4 (-2 - 10)	3 (2 - 3)

Note: Numbers in parentheses throughout this table represent the 95% confidence interval. Counties not tabulated have no quantifiable health benefits.

The incidents by air basin for avoided asthma symptoms and avoided work loss days vary by region, with the South Coast having the most avoided incidents.

4. Uncertainties Associated with the Mortality and Illness Analysis

Although the estimated health outcomes presented in this report are based on a well-established methodology, they are subject to uncertainty. Uncertainty is reflected in the 95% confidence intervals included with the central estimates. These confidence intervals consider uncertainties in translating air quality changes into health outcomes.

Other sources of uncertainty include the following:

- The relationship between changes in pollutant concentrations and changes in pollutant or precursor emissions is assumed to be proportional, although this is an approximation.
- Future population estimates are subject to increasing uncertainty as they are projected further into the future.
- Baseline health incidence rates can experience year-to-year variation.

5. Potential Future Evaluation of Additional Health Benefits

This expanded health analysis includes additional health outcomes that provide a more comprehensive evaluation of $PM_{2.5}$ exposure.[123] However, even the current $PM_{2.5}$ mortality and morbidity evaluation focuses on select air pollutants and only captures a portion of the health benefits of the Proposed SLG Amendments. Further updates to the methodology may quantify additional benefits of reducing air pollution, such as by including additional pollutants and health outcomes.

6. Monetization of Health Impacts

The reductions in adverse health impacts described above can be assigned monetary values so the health benefits can be directly compared to other costs and savings associated with the Proposed SLG Amendments. These values are derived from economics studies and are based on the expenses that an individual must bear for air pollution related health impacts, such as medical bills and lost work, or on willingness to pay metrics, which in addition to capturing the direct expenses of the health outcomes also capture the value that individuals place on pain and suffering, loss of satisfaction, and leisure time.

a. Methodology

Health outcomes are monetized by multiplying each incident by a value per incident that is consistent with the IPT method described above, using the standard economic studies and

[123] CARB, Methodology for Estimating the Health Effects of Air Pollution. Retrieved March 13, 2023. (weblink, *https://ww2.arb.ca.gov/resources/documents/carbs-methodology-estimating-health-effects-air-pollution*, last accessed November 18, 2024).

data as provided in U.S. EPA's Environmental Benefit Mapping and Analysis Program – Community Edition (BenMAP- CE).[124,125] The value per incident is derived from BenMAP-CE using the results for the total status quo PM-related incidence for each health endpoint used to derive the IPT and dividing them by the total valuation (or cost) as estimated in BenMAP-CE using the standard studies and data as listed in Table 6 to derive a dollar value for an avoided incident. These value per incident estimates are derived for each of the three years considered in our air quality scenario (2014-2016); an average is taken across the three years to derive the final estimate.[126] The economic studies and data used are the same as those used in U.S. EPA's recent Revised Cross-State Air Pollution Rule Update.[127] The dollar values per incident therefore are equivalent to those evaluated in that rule, only varying due to California-specific economic and demographic data.[128]

The value per incident for each endpoint derived by the methods described above are shown in Table 6.The value for avoided premature mortality is based on the value of statistical life (VSL), a measure of willingness-to-pay (WTP) from economic theory, which when applied to mortality risk provides a dollar estimate of benefits for an avoided premature death. The VSL is a statistical construct based on the aggregated dollar amount that a large group of people would be willing to pay for a reduction in their individual risks, such that one death would be avoided in the year across the population.[129] Specifically, the U.S. EPA central estimate of $7.4 million (2006$) is used for VSL. The estimate of VSL is adjusted for per capita income growth using U.S. EPA's central income elasticity estimate of 0.40 and the income growth forecast included in BenMAP-CE. This income elasticity estimate for VSL follows from empirical research and indicates that for every 1% increase in per capita income, the VSL increases by 0.4%, consistent with health risk reduction being a normal good whose demand increases with income. Finally, the value for VSL is adjusted for California inflation to present the values in 2023 dollars. While the economic benefit associated with avoided premature mortality is important to account for in the analysis, the valuation of avoided premature mortality does not directly correspond to changes in expenditures and is therefore not included in the macroeconomic modeling.

Unlike mortality valuation, the cost savings for morbidity-related endpoints, such as avoided hospitalizations and emergency room visits, as well as avoided disease onset and occurrence,

---

[124] U.S. Environmental Protection Agency, Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances: Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review", November 2023, (web link: *https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf,* last accessed June 7, 2025).

[125] The BenMAP Tool can be found on the *BenMAP webpage*. United States Environmental Protection Agency, Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE), December 30, 2024, (web link: *Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE) | US EPA*).

[126] CARB. Valuation Estimates Spreadsheet. 2023.

[127] U.S. Environmental Protection Agency. Technical Support Document (TSD) for the Final Revised Cross-State Air Pollution Rule update for the 2008 Ozone Season NAAQS: Estimating PM2.5- and Ozone-Attributable Health Benefits, March 2021, (Web link: *https://www.epa.gov/sites/default/files/2021-03/documents/estimating_pm2.5-_and_ozone-attributable_health_benefits_tsd_march_2021.pdf*, retrieved April 3, 2023).

[128] The California specific data that cause variation from national estimates are the data on county-level median daily wages and the age distribution of the population residing in each air basin. Small variations may also arise due to BenMAP-CE's Monte Carlo simulation methods.

[129] CARB. Valuation Estimates Spreadsheet. 2023.

are based on the cost of illness (COI) methodology.[130] The COI methodology uses a combination of typical costs associated with hospitalization or disease occurrence to assign economic value to the avoidance of such outcomes. The types of cost that are included across the different valuation studies applied here include hospital charges, post-hospitalization medical care, out-of--pocket expenses, lost earnings for both individuals and family members, and lost household production (e.g., valuation of time-losses from inability to maintain the household or provide childcare).

Table 6. Valuation per Incident for Avoided Health Outcomes (2023$)

Health Endpoint Onset/Occurrence	Value Per Incident	Valuation Methodology	Notes
Asthma Symptoms, Albuterol use	$283	WTP for symptoms + COI for Albuterol use	Willingness to pay plus cost of albuterol.
Work Loss Days	$228	COI	Based on county-level median daily wages.

b. Results

As shown in Table 7, the total statewide health benefits derived from criteria emissions reductions are estimated to be $8,797.[131]

Table 7. Statewide Valuation from Avoided Health Outcomes for Proposed SLG Amendments (Thousand 2023$)

Health Endpoint	2026	2027	2028	2029
Asthma Symptoms	0	0	$0.65	$1.20
Work Loss Days	0	0	$0.34	$0.64
Annual Total Valuations	**0**	**0**	**$0.99**	**$1.84**

Note: Only endpoints with incidents are quantified, 95% confidence interval values are not included.

B. Benefits to Public Agency Utilities

The Proposed SLG Amendments include numerous adjustments to existing exemptions which offer increased flexibilities to public agency utilities, providing more assurance in their ability to maintain their public services while still deploying zero-emission technology. First, the Proposed SLG Amendments provide more flexibility to public agency utilities to receive exemptions from the ZEV purchase requirements for replacing traditional utility-specialized vehicles earlier than the ACF regulation would otherwise allow. This will help ensure public agency utilities have the vehicles needed to maintain reliable service and respond to major foreseeable events, including severe weather, wildfires, natural disasters, and physical attacks.

[130] The WTP method is also used for valuation of one morbidity-related health endpoint: asthma symptoms.
[131] Numbers may not add up exactly to the totals due to rounding.

The Section 100 changes to the ACF regulation already made to implement parts of the AB 1594 changes, effective as of October 1, 2024, allow a public agency utility to submit more comprehensive daily usage readings for a traditional utility-specialized vehicle when applying for a Daily Usage Exemption. This means that more exemptions could be granted under the Daily Usage Exemption for traditional utility-specialized vehicles than for other vehicles.

These changes complement a number of other existing flexibilities in the ACF regulation applicable to public agency utilities. For example, the mutual aid provision allows fleet owners with mutual aid agreements to purchase new ICE vehicles once they have reached a certain percentage of ZEVs in their fleet for up to 25% of the total number of vehicles in their fleet. The ACF regulation requires most fleets to submit 30 consecutive workdays from the last year of available data, but any SLG fleet owner with mutual aid agreements can submit data from within the last 5 years instead. Additionally, any fleet can use real data from any 5-day ZEV demonstration period if it improves their ability to qualify for the daily usage exemption, plus the data can be shared with other fleets for similar vehicle weight class and configuration.

C. Other Societal Benefits

To the extent that fleet owners elect to purchase ePTO vehicles when granted ZEV exemptions, they potentially offer several other benefits to truck operators when compared to gasoline and diesel vehicles with traditional PTO. ICE vehicles working with ePTO engaged and engine off, are quiet and have no emissions. Reduced noise at the worksite creates a safer working environment, provides additional benefits to the community in which the vehicle is operating, and do not conflict with noise ordinances which could allow for expanded hours of operation and for operations near sensitive receptors.

D. Proposed Repeal of Portions of the Advanced Clean Fleets Regulation

The Proposed Repeal definitively clarifies that the Drayage, High Priority and Federal Fleets requirements of the ACF regulation will not be enforced. The Proposed Repeal will reduce uncertainty to these businesses and federal entities. Additionally, some grant programs cannot fund projects (i.e., fleets and vehicles) that are used to comply with a regulation. The Proposed Repeal will allow these fleets to be eligible for more funding programs for cleaner trucks, because the projects would be achieving emission reductions extra to what is legally required of them.

E. Proposed Amendments to the Low Carbon Fuel Standard Regulation

The proposed amendments to the LCFS regulation will benefit individual stations by providing more credits, but total credits generated across all stations will not change; as a result, the net effect of the proposal will be zero additional economic benefit. The LCFS program currently caps total credits that may be generated under the LMD-HRI provision, and this cap would remain unchanged even with these proposed amendments. Staff assumes that the LMD-HRI provision would have been fully utilized under the existing LCFS regulatory text but would not have supported stations large enough for medium-duty vehicles. Under this proposal, staff similarly assumes that the provision will be fully utilized, with no net change to total credit revenue.

VI. Air Quality

This chapter includes an analysis of air quality data and emissions reductions relevant to the Proposed SLG Amendments without other changes and separately describes the analysis associated with the Proposed Repeal.

A. Emissions Inventory Methods

Staff used the Emissions Factor Inventory Model of 2021 (EMFAC2021) model v1.0.2 to obtain the emission rate for all vehicle categories. The EMFAC2021 model, which already incorporates ACT and HD Omnibus regulations, was further adjusted to reflect the impact of recently adopted regulations including HDI&M as well as the federal Clean Truck Plan on emission rates. The NOx, CO_2 and PM emission rates for Class 2b - 8 public vehicle trucks were estimated based on the Class 2b-8 vehicle categories (LHD1[132], LHD2[133], T6 Public Class 4-7 and T7 Public Class 8) in EMFAC2021. It should be noted that PM, CO_2 and NOx exhaust emissions for all traditional specialized utility vehicle categories were increased by 20% to account for PTO activities in all scenarios.

The following section provides discussion of the projected emissions benefits from the Proposed SLG Amendments on both criteria pollutants (NOx and $PM_{2.5}$) and GHGs. The analysis of these statewide tank-to-wheel emissions reductions from the Proposed ACF Amendments are compared with the Section 100 Baseline and demonstrate that emissions benefits increase as public agency utilities phase-in ZEV.

B. Section 100 Baseline Information

For Administrative Procedure Act (APA) purposes, the economic and emissions impacts of the Proposed SLG Amendments are evaluated against the business as usual (BAU) scenario each year for the analysis period from 2026 to 2029 for the public agency utility fleets only; this baseline is referred to as the "Section 100 Baseline" because it includes the non-discretionary AB 1594 changes approved by OAL on August 26, 2024, i.e., allows for more exemptions to purchase ICE vehicles for public agency utility fleets, as described previously in Section 100 Changes.[The Proposed SLG Amendments and the Section 100 Baseline use the same inventory of self-reported TRUCRS data. For more information on the inventory used for this analysis, please see the Vehicle Population section in Chapter VIII. The Section 100 Baseline, while limited to years 2026-2029, reflects the same conditions as ACF's Adjusted Legal Baseline, which is a forward-looking, business-as-usual baseline used for APA, air quality and economic analysis purposes that includes the implementation of all existing State and federal laws and regulations on the vehicles the Proposed SLG Amendments would affect. These approved regulations include ACT, Heavy Duty Omnibus, Clean Truck Check, and the Low Carbon Fuel Standard (LCFS) regulation. The difference between ACF's Adjusted Legal Baseline and the Section 100 Baseline are discussed previously in Section 100 Changes.

Staff used CARB's Emission Factor Inventory Model (EMFAC) model to assess the Section 100 Baseline vehicle inventory, including vehicle sales and population growth assumptions, for Class 2b and larger vehicles for all fuel types. EMFAC is California's official on-road mobile source inventory model that CARB uses for various clean air planning, policy development and

[132] Light Heavy Duty 1 (LHD1) is equivalent to Class 2b vehicle category.
[133] Light Heavy Duty 2 (LHD2) is equivalent to Class 3 vehicle category.

regulatory efforts. The EMFAC2021 model incorporates CARB's current understanding of statewide and regional vehicle activity and emissions. The model used in this effort reflects the impact of ACT, Heavy-Duty Omnibus, Heavy-Duty Inspection and Maintenance as well as Clean Trucks Plan on emission rates. The economic and environmental impacts attributable to the Proposed SLG Amendments are solely attributable to new actions beyond those already expected by public agency utility fleets implementing the ACF regulation. Only changes attributable to the Proposed SLG Amendments are included in the emissions and cost analysis. Staff employed EMFAC2021 to obtain emissions per vehicle for each fuel type/model year, which were then applied to each population scenario (i.e., Section 100 Baseline and Proposed SLG Amendments) to estimate total emissions.

C. Emissions Results of Proposed State and Local Government Amendments

The following tables summarize the exhaust emissions for the Proposed SLG Amendments compared to Section 100 Baseline. The projected statewide emissions benefits of the Proposed SLG Amendments from 2026 through 2029 are shown in Table 8. The emissions values presented are Tank-to-Wheel (TTW) (i.e., vehicle tank to tailpipe) emissions reductions. The following emissions projections present a conservative estimate of the emissions implications of the Proposed SLG Amendments, in tons per year (tpy) and metric tons per year (MT/yr.).

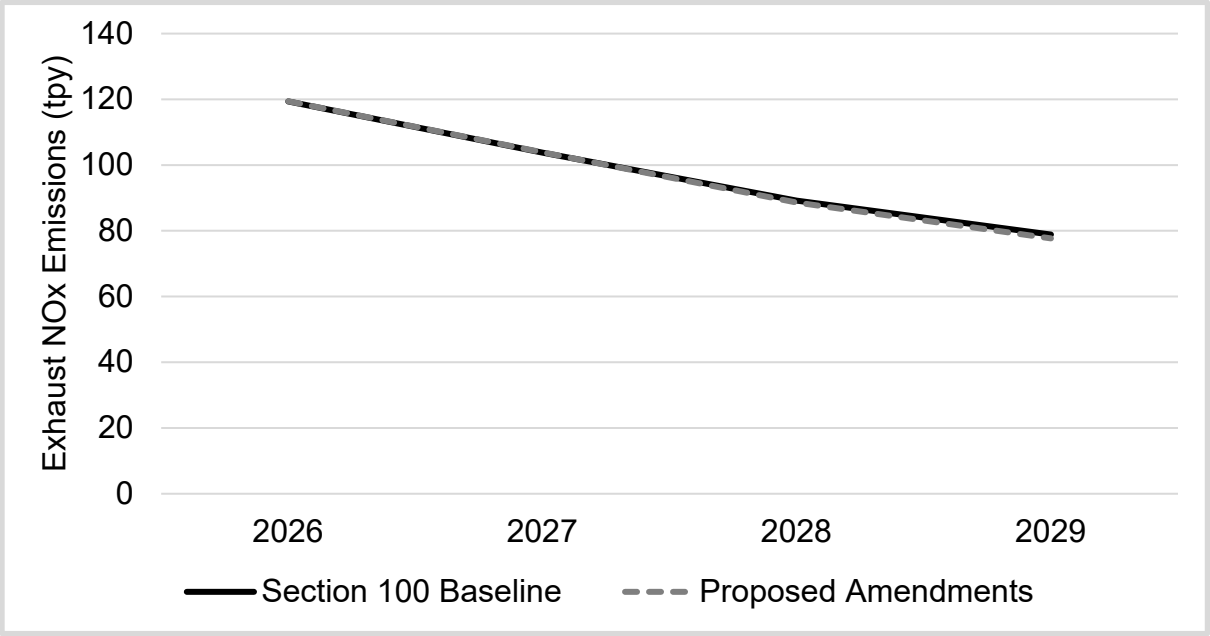
Table 8: Statewide Tank-to-Wheel NOx, $PM_{2.5}$, and CO2 Annual Emissions of the Proposed SLG Amendments, Relative to Section 100 Baseline

Calendar Year	NOx (tpy)	$PM_{2.5}$ (tpy)	CO_2 (MT/yr.)
2026	0.02	0.000	62
2027	0.06	0.000	155
2028	-0.61	-0.005	-2,581
2029	-1.16	-0.010	-4,775
Totals	**-1.69**	**-0.015**	**-7,139**

Figures below represent projected statewide emissions from the Section 100 Baseline, and the Proposed SLG Amendments from 2026 through 2029 for NOx, $PM_{2.5}$, and CO_2. The emissions presented are TTW (i.e., vehicle tank to tailpipe) emissions. Both Section 100 Baseline and Proposed SLG Amendments present a similar reduction in emissions as presented in the figures below.

In Figure 5 the emissions for Section 100 Baseline and the Proposed SLG Amendments are expected to decrease over time as more ZEV are deployed. Under both the Proposed SLG Amendments and Section 100 Baseline, NOx emissions are projected to decline by about 35% of 2026-levels by 2029. This downward trend mirrors that shown in Figure 8, suggesting that the Proposed SLG Amendments align with the emissions reductions expected from ACF's Adjusted Legal Baseline, and thus maintain the status quo.

Figure 5: Projected Statewide TTW NOx Emissions for Section 100 Baseline, and Proposed SLG Amendments for Public Agency Utility Vehicles



Shown below in Figure 6, $PM_{2.5}$ emissions with the Proposed SLG Amendments are expected to follow a similar decline compared to Section 100 Baseline. $PM_{2.5}$ emissions expected to decrease to 25% of 2026-levels by 2029. This downward trend mirrors that shown in Figure 9, indicating that the Proposed SLG Amendments align with the emissions reductions expected from ACF's Adjusted Legal Baseline, and thus maintain the status quo.

Figure 6: Projected Statewide Tank-to-Wheel $PM_{2.5}$ Emissions for Section 100 Baseline, and Proposed SLG Amendments for Public Agency Utility Vehicles

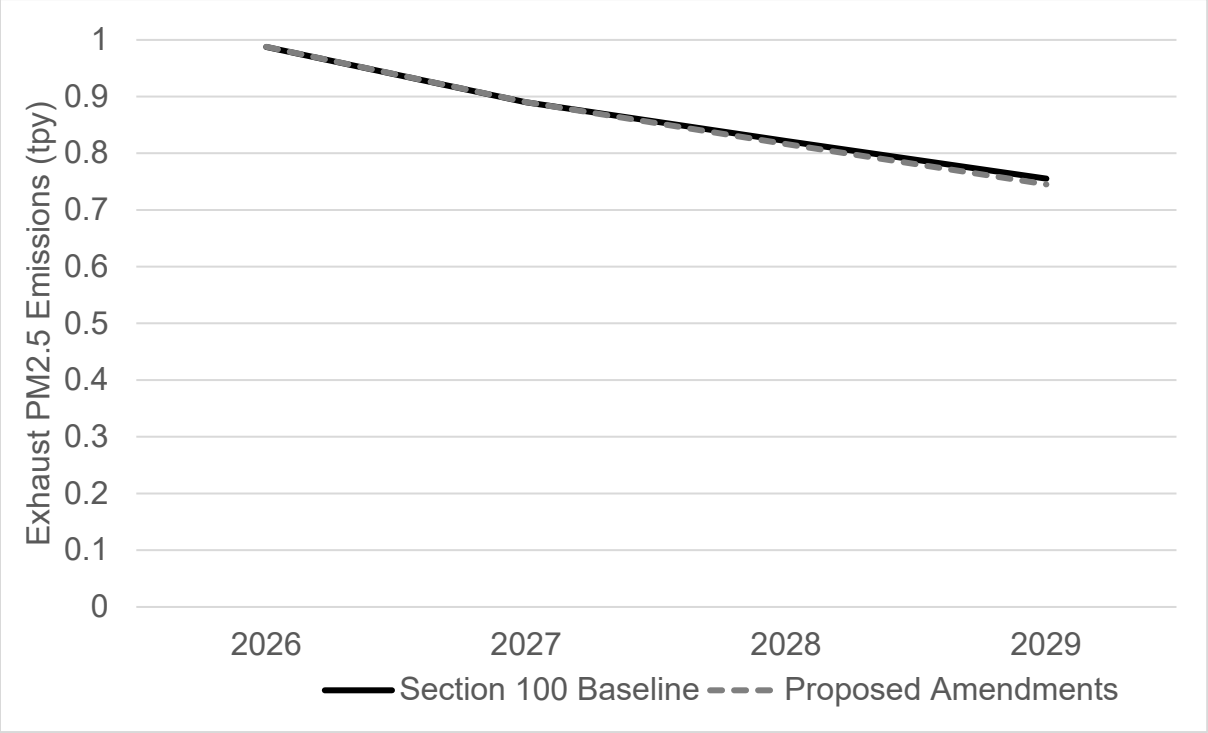
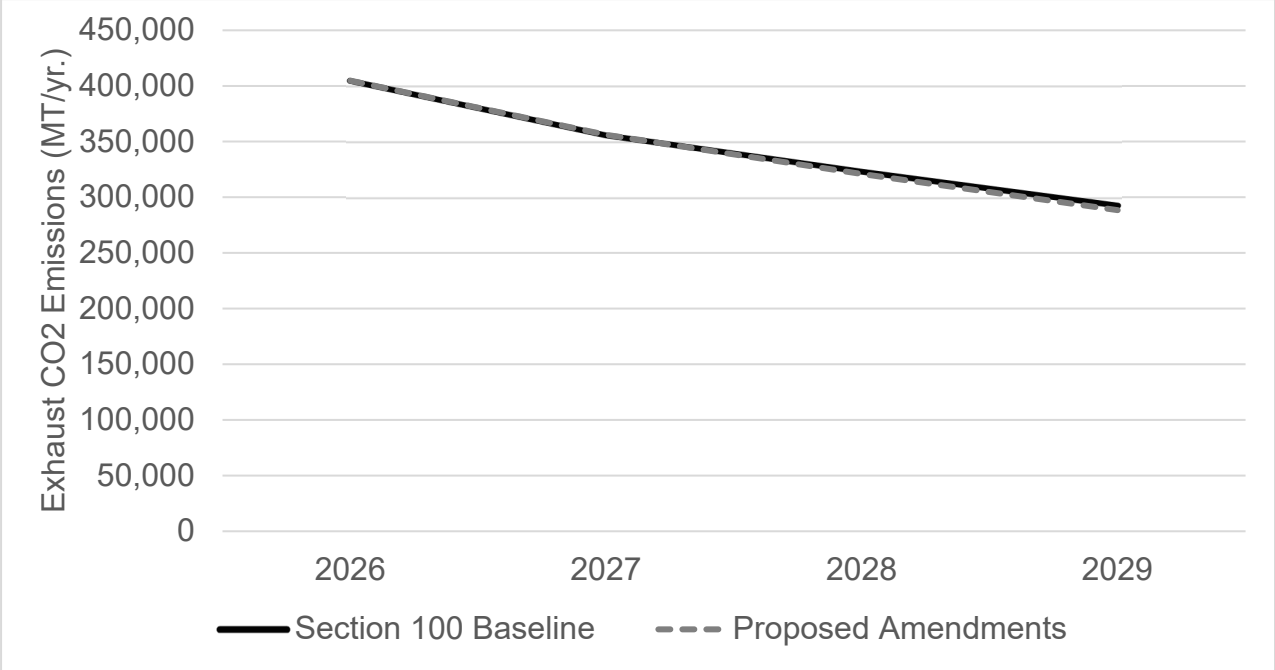


Figure 7 summarizes the estimated TTW GHG emissions from the Proposed SLG Amendments and the Section 100 Baseline, in units of $MTCO_2$ per year. The Section 100 Baseline and the Proposed SLG Amendments will reduce the emissions of carbon dioxide ($MTCO_2$) to 29% of 2026-levels by 2029. This downward trend mirrors that shown in Figure 10, suggesting that the Proposed SLG Amendments align with the emissions reductions expected from ACF's Adjusted Legal Baseline, and thus maintain the status quo.

Figure 7: Projected Statewide Tank-to-Wheel MTCO2 Emissions for Section 100 Baseline and Proposed SLG Amendments for Public Agency Utility Vehicles



D. Proposed Repeal of Portions of the Advanced Clean Fleets Regulation

The Proposed Repeal of the elements of the ACF regulation applicable to High-Priority, Federal and Drayage fleets means the emissions reductions originally estimated in the 2022 rulemaking would not occur. The Proposed Repeal and 2022 ACF Legal Baseline use the same inventory, both from the ACF rulemaking, which is annual estimates of California's Class 2b through 8 vehicle population and sales data from CARB's EMFAC2021 inventory model.[134] For more information see Chapter VIII Economic Impacts Assessment B.2. Vehicle Population in the ACF 2022 ISOR.[135]

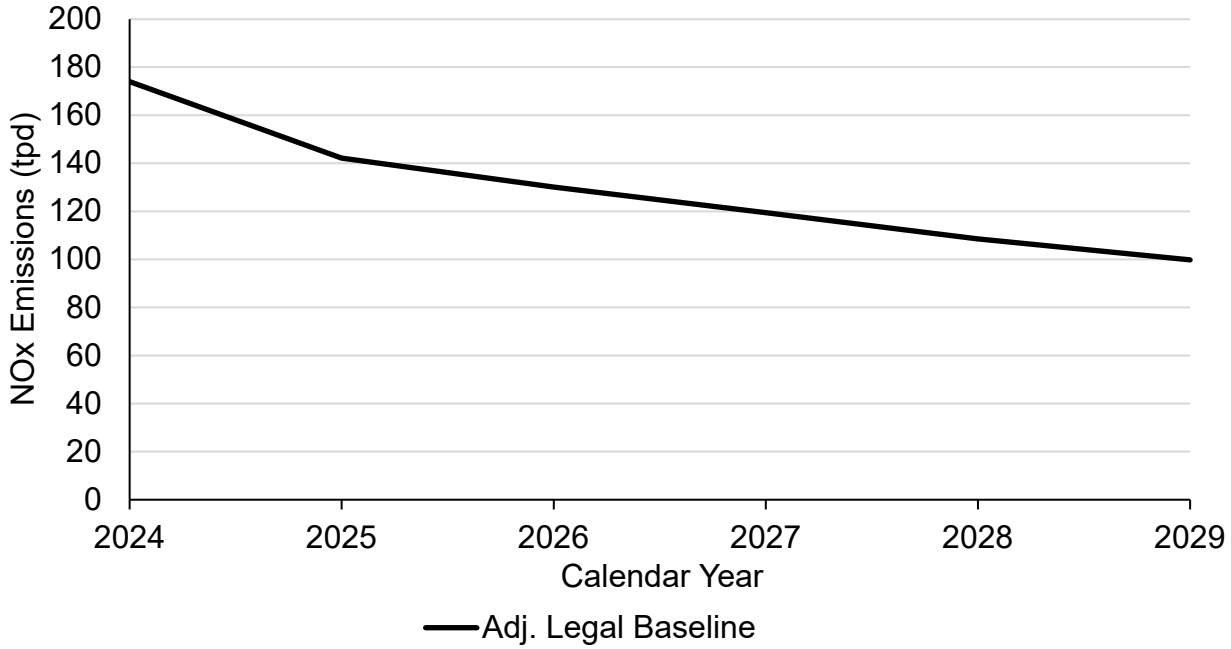
As part of the ACF 2022 rulemaking 15-day changes, CARB estimated that, between 2024 and 2029, the ACF regulation would have reduced: 9,874 tons of NOx, 110 tons of $PM_{2.5}$, and 7 million metric tons of CO_2 into the atmosphere, with even more emissions reductions to 2035.[136] These estimates, however, assumed that CARB would begin implementing and enforcing the entire ACF regulation in 2024. With the Proposed Repeal, staff determined that the SLG portion alone would not result in more ZEV sales than already expected in any year due to the effects of the ACT regulation as is shown on Figure 1. Therefore, the effect of the proposed changes including Proposed Repeal together means that the emissions reductions from ZEV purchase requirements and associated health benefits originally estimated in

[134] CARB, ACF Inventory Analysis Updated, 2023.
[135] CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf*, last accessed October 18, 2024).
[136] CARB, CARB Statewide_ACF_Benefits_Summary_15DayChange_020123 Spreadsheet, downloaded on March 17, 2025.

Chapter II and III of the 2022 ISOR[137] would not be achieved and would not differ from the Legal Baseline in the 2022 ACF Rulemaking.

The Legal Baseline[138] in the 2022 ACF Rulemaking included ACT and HD Omnibus regulations and was later adjusted to include the HDI&M and the federal CTP regulations. Figure 8, Figure 9 and Figure 10, display the NOx, fine particulate matter and GHG emissions, respectively, of the Adjusted Legal Baseline from the 2022 ACF Rulemaking.[139] The Proposed Repeal will result in maintaining the status quo and will not result in higher emissions than in 2024, the first compliance year for the ACF regulation and beyond. The Adjusted Legal Baseline NOx, $PM_{2.5}$ and GHG emissions trends are displayed out to 2029 because that is the same time frame as the Proposed SLG Amendments analysis.

Figure 8: Projected Statewide NOx Tank-to-Wheel Emissions from 2022 ACF Rulemaking Adjusted Legal Baseline



[137] CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf*, last accessed October 18, 2024).
[138] The Legal Baseline in the 2022 ACF Rulemaking is a "business-as-usual" baseline, used for Administrative Procedure Act (APA) and economic analysis purposes, showing year-over-year projected emissions under a "business-as-usual" scenario absent the ACF regulation.
[139] California Air Resource Board, Appendix B: Updated Costs and Benefits Analysis Posted March 23, 2023. ACF Rulemaking. (weblink: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15db.pdf*, last accessed March 27, 2025).

Figure 9: Projected Statewide $PM_{2.5}$ Tank-to-Wheel Emissions 2022 ACF Rulemaking Adjusted Legal Baseline

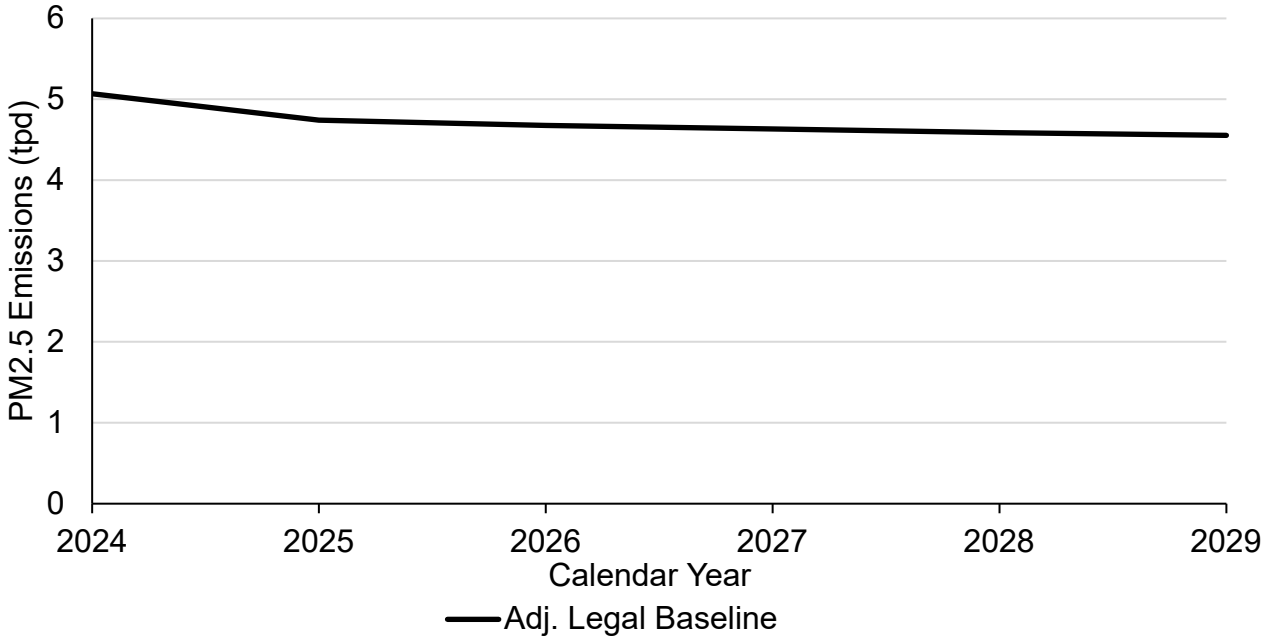
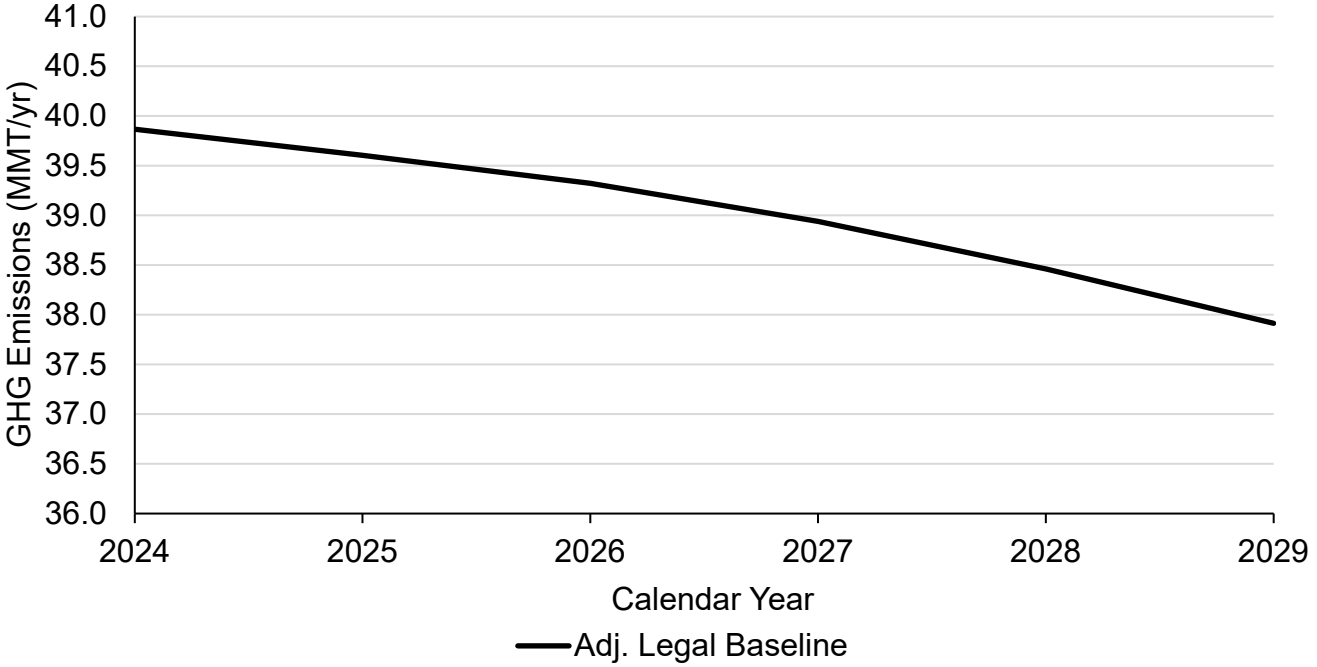


Figure 10: Projected Statewide CO2 Tank-to-Wheel Emissions from 2022 ACF Rulemaking Adjusted Legal Baseline



VII. Environmental Analysis

A. Introduction

CARB is the Lead Agency under the California Environmental Quality Act (CEQA) of the Proposed Amendments. This chapter provides the basis for CARB's CEQA determination for the Proposed Amendments, which include the Proposed SLG amendments, Proposed Repeal and the Proposed LCFS Amendments (Project). CARB's regulatory program—which involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans for the protection and enhancement of the State's ambient air quality has been certified by the California Secretary for Natural Resources under Public Resources Code section 21080.5 of the California Environmental Quality Act (CEQA) (Cal. Code Regs., tit. 14, § 15251(d)). Public agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to, preparing environmental impact reports, negative declarations, and initial studies. CARB, as a lead agency, prepares a substitute environmental document (referred to as an "Environmental Analysis" or "EA") as part of the Staff Report to comply with CEQA (Cal. Code Regs., tit. 17, §§ 60000 to 60008).

This EA explains why the Project is exempt from the requirements of CEQA. It also serves as a substitute document equivalent to an addendum to the Final EA to the Advanced Clean Fleets Regulation[140] (Final ACF EA) and the Final EIA for the Amendments to the Low Carbon Fuel Standard Regulation (Final LCFS EIA) and explains CARB's determination that no additional environmental analysis is required for the Project.

B. Prior Environmental Analysis

1. Advanced Clean Fleets Regulation

CARB previously prepared the Final ACF EA under its certified regulatory program (Cal. Code Regs., tit. 17, §§ 60000-60008) to comply with the CEQA requirements. The Final ACF EA provided an environmental analysis of the ACF regulation, which focused on reasonably foreseeable potentially significant adverse and beneficial impacts on the physical environment resulting from reasonably foreseeable compliance responses to the regulation.

The draft ACF regulation and Draft ACF EA were first presented to the Board in October 2022. CARB responded in writing to comments received on the Draft ACF EA in a response to comments document that was made publicly available on April 17, 2023. At the second hearing in April 2023, the Board adopted Resolution 23-13 certifying the Final ACF EA and adopting the findings and statement of overriding considerations. A Notice of Decision was filed with the Secretary of State on June 22, 2023, and the regulation was effective on October 1, 2023. All associated documents are available at *https://ww2.arb.ca.gov/rulemaking/2022/acf2022*.

The Final ACF EA provided an analysis of the potentially significant adverse and beneficial environmental impacts resulting from implementation of the ACF regulation and their associated reasonably foreseeable compliance responses. In addition, the Final ACF EA used

[140] CARB, Final Environmental Analysis for the Proposed Advanced Clean Fleets Regulation, April 14, 2023, (web link: *acffinalea.docx ,* last accessed on November 20, 2024).

a conservative approach and considered some environmental impacts as potentially significant because of the inherent uncertainties in the relationship between physical actions that were reasonably foreseeable under the rulemaking and environmentally sensitive resources or conditions that may be affected.

The Final ACF EA concluded that implementation of the ACF regulation has the potential to result in:

- beneficial impacts to long-term operation-related air quality, long-term operation-related energy demand, and long-term operation-related GHG emissions and climate change;
- less than significant impacts, or no impacts, to short-term construction-related energy demand, short-term construction-related GHG emissions and climate change, land use and planning, mineral resources, population and housing, public services, recreation, and wildfire; and
- potentially significant adverse impacts to aesthetics, agricultural and forest resources, air quality (due to short-term, construction- related emissions), biological resources, cultural resources, geology, seismicity, and soils, hazards and hazardous materials, hydrology and water quality, noise, transportation, tribal cultural resources, and utilities and service systems.

While many of the identified potentially significant adverse impacts could be reduced to a less than significant level by mitigation that can and should be implemented by local lead agencies, authority to do so is beyond the purview of CARB. The authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, causing inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Consequently, the Final ACF EA took the conservative approach in its post mitigation significance conclusion and disclosures of potentially significant and unavoidable adverse impacts, for CEQA compliance purposes. The significance determinations are discussed in greater detail in the Final ACF EA. As discussed below, the proposed modifications to the ACF regulation would not constitute a substantial change or new information resulting in any new significant effects or a substantial increase in the severity of previously identified significant effects.

1. Low Carbon Fuel Standard Regulation

CARB previously prepared the Final Environmental Impact Analysis for the LCFS Regulation (Final LCFS EIA) under its certified regulatory program (Cal. Code Regs., tit. 17, §§ 60000-60008) to comply with the CEQA requirements. The Final LCFS EIA provided CARB's environmental analysis, which focused on reasonably foreseeable potentially significant adverse and beneficial impacts on the physical environment resulting from reasonably foreseeable compliance responses. CARB responded in writing to comments received on the Draft LCFS EIA and Recirculated Draft LCFS EIA in the Response to Environmental Impact Analysis Comments document that was made publicly available on November 6, 2024. At the public hearing on November 8, 2024, the Board adopted Resolution 24-14 certifying the Final LCFS EIA and adopting the findings and statement of overriding considerations. A Notice of Decision was filed with the Secretary of State on November 22, 2024. All associated documents are available at *https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024*.

The Final LCFS EIA provided an analysis of the potentially significant adverse and beneficial environmental impacts resulting from implementation of the LCFS Amendments and their associated reasonably foreseeable compliance responses. In addition, the Final LCFS EIA used a conservative approach and considered some environmental impacts as potentially significant because of the inherent uncertainties in the relationship between physical actions that were reasonably foreseeable under the rulemaking and environmentally sensitive resources or conditions that may be affected.

Compliance responses to the LCFS Amendments were expected to result in:

- beneficial impacts to greenhouse gas emissions;
- less-than-significant impacts to air quality (odor-related), energy demand, mineral resources (short-term construction-related), population and housing, public services, recreation; and
- potentially significant and unavoidable adverse impacts to the following resource areas could occur: aesthetics, agriculture and forestry, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources (long-term operational related), noise, transportation, tribal cultural resources and utilities and service systems.

While many of the identified potentially significant adverse impacts could be reduced to a less-than-significant level by mitigation that can and should be implemented by local lead agencies, authority to do so is beyond the purview of CARB. The authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, causing inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Consequently, the Final LCFS EIA took the conservative approach in its post-mitigation significance conclusion and disclosures of potentially significant and unavoidable adverse impacts, for CEQA compliance purposes. The significance determinations are discussed in greater detail in the Final LCFS EIA. As discussed below, the Proposed Modifications to the LCFS Amendments would not constitute a substantial change or new information resulting in any new significant effects or a substantial increase in the severity of previously identified significant effects.

C. The Proposed Regulatory Action

1. Advanced Clean Fleets Regulation

The proposed amendments to the ACF regulation include the Proposed SLG Amendments and the proposed repeal of the drayage and high priority and federal fleet requirements. (Proposed Repeal) CARB initiated analyzing the environmental impacts of portions of the proposed amendments in 2024, making 2024 the appropriate year for the CEQA baseline. (tit. 14, Cal. Code Regs., § 15125(a).) These amendments are summarized by the following modifications:

- Define “a public agency utility” to include a local publicly owned electric utility, as defined in Section 224.3 of the PUC, a community water system, as defined in Section 116275 of the HSC, a water district, as defined in Section 20200 of the Water Code, and a wastewater treatment provider, as defined in section 116773.2 of the Health and Safety Code.

- Define a “traditional utility-specialized vehicle” using criteria that differentiates specialized ICE vehicles from a public agency utility’s more general vocational trucks, recognizing that traditional utility-specialized vehicles are deployed around-the-clock to maintain reliable service and respond to major foreseeable events, including severe weather, wildfires, natural disasters, and physical attacks.
- Authorize public agency utilities to purchase replacements for traditional utility-specialized vehicles that are at the end of life by providing criteria other than the model year of the vehicle being replaced.
- Amend the ACF regulation’s Daily Usage Exemption to allow a public agency utility to submit a comprehensive usage report for the same vehicle class and configuration of vehicles in their fleet when applying for a Daily Usage Exemption.
- Repeals parts of the ACF regulation, in Title 13 of the CCR, specifically the Drayage requirements in Chapter 1, Article 3.2, Section 2014, and the High Priority and Federal Fleet requirements in Chapter 1, Article 3.2, section 2015.

The proposed modifications do not change the type of facilities or projects that may be developed in response to the existing ACF regulation, nor do staff anticipate that they will alter the compliance responses by regulated entities covered by the program. As such, these proposed amendments are not expected to introduce any new environmental impacts that were not already evaluated under the Final ACF EA. Staff determined that the Proposed ACF Amendments, including the Proposed Repeal and the Proposed SLG Amendments, would not result in more ZEV sales than already expected in the original 2022 baseline conditions in any year. In other words, the SLG provision itself is not expected to drive any emissions reductions. Therefore, the effect of all of the proposed changes including the Proposed SLG Amendments and the Proposed Repeal together means that all of the emissions reductions and health benefits originally estimated in Chapter II and III of the 2022 ISOR[141] for the Advanced Clean Fleets regulation from 2024 and beyond would not be achieved and would not differ from the Adjusted Legal Baseline[142] in the 2022 ACF Rulemaking. Furthermore, as explained below, no emissions increases are expected to occur as compared to the CEQA baseline of 2024 (existing conditions).

2. Low Carbon Fuel Standard Regulation

Staff are proposing to modify the derating factors for LMD-HRI crediting within the LCFS regulation in Title 17 of the Cal. Code Regs., section 95486.3 (Proposed LCFS Amendments). Hydrogen refueling stations approved for HRI crediting receive credits for their unused refueling capacity, in addition to credits generated for dispensing fuel to fuel cell electric vehicles. Staff proposes to reduce the derating factor, such that LMD-HRI stations may receive HRI credits for the full nameplate capacity (up to 1,200 kilograms per day) for public stations, and 50% of the nameplate capacity for private stations. This change will provide stronger crediting support for hydrogen stations and more adequately supports development of stations that can accommodate the refueling demand of larger medium-duty hydrogen fuel cell electric

[141] CARB, Appendix B: Updated Costs and Benefits Analysis Posted March 23, 2023. ACF Rulemaking. (weblink: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15db.pdf*, last accessed March 27, 2025).
[142] Legal Baseline in the 2022 ACF Rulemaking included ACT and HD Omnibus regulations, and was later adjusted to include the HDI&M and the federal CTP regulations.

vehicles. The change will not increase the total HRI credits generated by the HRI program in aggregate, due to an existing cap on program-wide HRI crediting.

D. Consistency with Applicable Air Quality and Climate Plans

The Proposed Repeal is not inconsistent with plans to protect California's air quality and climate goals. As the state's air quality and climate agency, CARB develops both air quality and climate-focused plans to chart the course for the state to meet its air quality and climate goals. Relevant plans include California's 2022 State Implementation Plan (2022 SIP Strategy)[143] the 2022 Climate Change Scoping Plan Update (2022 Scoping Plan),[144] as well as with the 2020 Mobile Source Strategy (2020 MSS).[145]

CARB's 2022 SIP Strategy focuses on emission reductions needed to meet the health-based 70 parts per billion federal ozone standard and is updated as needed. CARB's 2022 Scoping Plan was developed to reduce GHG emissions in California and is updated every 5 years. CARB's MSS integrates the two plans and looks broadly at existing and emerging transportation technologies needed for the State to meet its various clean air goals and is also updated every 5 years.

The ACF regulation was identified as one of the measures California can pursue to achieve GHG targets and regional air quality standards, however parts of it remain unenforceable. Without a federal waiver regarding the Drayage, High Priority and Federal Fleets parts of the ACF regulation, those businesses are unlikely to comply, and emission reductions cannot be guaranteed. The Proposed Repeal will give CARB the space to propose new enforceable regulations with compliance strategies that can guarantee needed emission reductions from the medium- to heavy-duty on-road vehicle sector. The 2022 SIP Strategy, the 2022 Scoping Plan, and the 2020 MSS will be updated to reflect any new enforceable regulations and compliance strategies. As discussed in further detail below, the Proposed Repeal is consistent with plans that the Board has adopted to protect California's air quality.

1. 2020 Mobile Source Strategy

The 2020 MSS constitutes CARB's integrated planning strategy to achieve reductions of criteria pollutants and GHGs from mobile sources that are needed to achieve California's air quality and climate goals, such as attaining state and national ambient air quality standards. Mobile sources and the fossil fuels powering them emit the majority of criteria pollutants, including diesel particulate matter and smog-forming NO_x, and the largest portion of GHGs, into California's air. The MSS, along with CARB's other planning efforts, helps set the course for addressing emissions from these sources statewide.

The 2020 MSS is comprised of several conceptual strategies that generally rely on the application of technologies to reduce emissions from various mobile source sectors. Although those conceptual strategies broadly reflect the scale of technology transformation that needs to occur in California's mobile source sector, they do not pinpoint specific strategies or policy

---

[143] CARB, 2022 State Strategy for the State Implementation Plan, Sept. 22, 2022. Available at: *https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf*.
[144] CARB, The AB 32 Scoping Plan, 2022 (web link: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents, last accessed May 2022).
[145] CARB, 2020 Mobile Source Strategy, Oct. 28, 2021. Available at: *https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf*.

tools; the needed level of that transformation necessarily requires multiple policy tools, since no one individual strategy or tool will achieve all of California's planning goals.[146]

It should also be noted that those conceptual strategies are, after further refinement, also incorporated into other plans that CARB has adopted to demonstrate attainment with national ambient air quality standards (i.e., the 2022 SIP Strategy[147]) and to achieve California's goals of reducing statewide GHG emissions (i.e., the 2022 Scoping Plan).[148]

The 2020 MSS includes a conceptual strategy that relies on California's transportation sector rapidly incorporating the usage of zero-emitting technologies in all feasible applications.[149] The proposed action is consistent with that conceptual strategy because it retains the elements of the ACF regulation that require SLG fleets to purchase specified percentages of zero-emitting medium- and heavy-duty vehicles beginning in the 2024 model year, and requires all SLG fleets to purchase only zero-emitting medium- and heavy-duty vehicles beginning in the 2027 model year, and accordingly advances zero-emitting technologies in affected SLG fleets. Importantly, CARB also periodically updates and adjusts its air quality and climate planning documents as needed to reflect changes in law, implementation, and other circumstances, to ensure that the state remains on a path to meeting its air and climate goals.

2. 2022 State Strategy for the State Implementation Plan (SIP Strategy)

The 2022 SIP Strategy describes California's commitments to develop control measures for state-regulated sources of emissions that are needed to primarily demonstrate attainment with the national ambient air quality standards, particularly the standards for ozone.[150] The 2022 SIP Strategy consists of a framework for developing and proposing future rulemaking actions, rather than itself adopting any specific discrete and enforceable requirements.[151] The SIP Strategy commits to achieving the State's air quality goals in the aggregate, and notes that the portfolio of individual measures for achieving those goals will continue to evolve.[152] Consequently, the 2022 SIP Strategy only estimates emissions reductions attributable to the aggregated control measures in the 2022 SIP projected emissions, rather than the emissions reductions attributable to a specific regulation.[153] In other words, CARB's overall commitment in the 2022 SIP Strategy is to achieve the overall emissions reductions needed to attain applicable federal air quality standards, rather than achieving the emissions reductions initially projected for a specific measure. Consequently, even if a specific discrete proposed measure ultimately does not achieve its initially projected emissions reductions, that circumstance does not create an inconsistency with the 2022 SIP Strategy because it does not affect CARB's

---

[146] 2020 MSS at p. 80.
[147] Id. at pp. 47-48, 51-52.
[148] Id. at p. 73.
[149] 2020 MSS at pp: 5, 25, 47-48, 68, 72-73, 135-136, 139, and 187-188.
[150] Specifically, the 8-hour zone standard of 70 parts per billion (ppb) (70 ppb ozone standard).
[151] 2022 SIP at pp. 3, 18.
[152] See, e.g., August 12, 2022, CARB State Implementation Plan Strategy at 33 ("While the Proposed 2022 State SIP Strategy includes estimates of the emissions reductions from each of the individual new measures, CARB's overall commitment is to achieve the total emissions reductions necessary from State-regulated sources to attain the federal air quality standards, reflecting the combined reductions from the existing control strategy and new measures. Therefore, if a particular measure does not get its expected emissions reductions, the State's overall commitment to achieving the total aggregate emissions reductions still exists."); available at *https://ww2.arb.ca.gov/sites/default/files/2022-11/Proposed_2022_State_SIP_Strategy.pdf*.
[153] Id. at p. 4.

obligations to achieve the above-mentioned overall emissions reductions.[154] Furthermore, the SIP Strategy is updated routinely, and CARB has a long history of adjusting its portfolio of programs, as needed, to track the State's evolving air quality and climate goals. Additionally, CARB's adopted plans do not prevent CARB's Board from declining to proceed on a specific regulatory action included in the plans, as CARB's Board maintains discretion to evaluate and adjust the individual measures for achieving the State's air quality and climate goals as needed over time. CARB remains committed to satisfying its planning obligations under the Clean Air Act.

The proposed action is consistent with the 2022 SIP Strategy's control measures for mobile sources that rely on technology-forcing emissions standards for new vehicles,[155] and more specifically, with the control measure requiring state and local governmental fleets to add only ZEV beginning in 2027.[156]

Furthermore, although the 2022 SIP Strategy establishes enforceable commitments to achieve the level of emissions necessary to meet federal air quality standards, the total aggregate emissions reductions and associated obligations to propose or implement measures needed to achieve such emissions reductions are only enforceable after U.S EPA approves such measures.[157] CARB has not yet requested that U.S. EPA include the initially adopted ACF regulation into the State's SIP, and consequently that regulation is not yet reflected. Moreover, the proposed rulemaking would not affect CARB's ability to request that U.S. EPA include in the SIP those elements of the ACF regulation that provide California with emissions reductions from new medium- and heavy-duty vehicles acquired and operated by SLG fleets, and such elements are consistent with the 2022 SIP Strategy's overall estimated emissions reductions.

3. 2022 Climate Change Scoping Plan Update

The 2022 Scoping Plan Update describes California's current overall strategy to reduce GHG emissions to meet legislative targets. The California Global Warming Solutions Act of 2006, AB 32 (Nunez, Stats. 2006, ch. 488) created a comprehensive program to reduce GHG emissions in California and requires CARB to develop and approve a Scoping Plan that describes the approach that the State plans to take to reduce GHG emissions. AB 32 requires CARB to update the Scoping Plan at least every five years. In 2016, the Legislature passed Senate Bill 32 (SB 32) (Pavley, Stats. 2016, ch. 249), which requires CARB to reduce GHG emissions to 40% below 1990 levels by 2030. The 2022 Scoping Plan Update includes a sector-by-sector roadmap for California to reduce GHG emissions to at least 85% below 1990 levels no later than 2045, and to also achieve carbon neutrality no later than 2045, as directed by AB 1279 (Muratsuchi, Stats. 2022, ch. 337).

The 2022 Scoping Plan Update, like the 2022 SIP Strategy, outlines a suite of policies to assist California in attaining its emissions reductions goals.[158] Following approval of the 2022 Scoping Plan Update, CARB staff has worked to develop and implement more specific policies

---

[154] Id. at p. 33, 54. 59-60.
[155] Id. at pp. pp: 13, 34 ,35,38, 41, 43, 45, 47, 49, 51 and 53.
[156] Id. at. pp. 57.
[157] Id. at p.32.
[158] 2022 Scoping Plan Update at p. 135 "To implement this Scoping Plan, dozens of individual regulations, policies, and incentive programs are anticipated that work together to drive down emissions across all economic sectors and support actions."

and programs to effectuate the plan. Should CARB determine that existing policies are not achieving needed reductions, CARB may propose and develop additional measures to ensure that all sectors stay on track to reduce emissions.[159]

Analogous to the structure of the 2022 SIP Strategy discussed above, the 2022 Scoping Plan Update constitutes CARB's strategy to achieve reductions of GHGs at a programmatic level, rather than a commitment to achieve specified levels of GHG reductions from any regulatory concept. Consequently, as explained above for the 2022 SIP Strategy, the fact that a specific CARB regulatory concept discussed in the 2022 Scoping Plan Update may not achieve an initially projected reduction of GHG emissions does not mean that concept is inconsistent with the 2022 Scoping Plan Update, as CARB routinely updates and adjusts the Scoping Plan as needed to achieve the State's climate goals. Indeed, the 2022 Scoping Plan Update's reliance on a large number of complementary regulations, policies, and programs to reduce emissions across multiple industries and sectors makes quantifying the individual emission reductions of a specific policy, program, or regulation within the 2022 Scoping Plan Update difficult to do with any reasonable certainty. This uncertainty is reasonable because projected emissions reductions in a given sector may be achieved through a combination of programs, regulations, and incentives,[160] and because the broad strategies identified in 2022 Scoping Plan Update may only be implemented through the exercise of broad discretion to design the range of regulatory and other mechanisms for achieving the state's climate targets.

The 2022 Scoping Plan Update calls for a policy of aggressively reducing the usage of fossil fuels throughout California, including in California's transportation sector,[161] as that sector constitutes the State's largest source of GHG emissions.[162] The proposed action is consistent with that policy, because it would reinforce regulatory requirements to introduce the deployment of zero-emitting trucks, which the 2022 Scoping Plan Update recognized will be essential to attaining its GHG reduction goals.[163]

E. Exemption Analysis

Under CEQA, certain classes of projects may be exempt from environmental review unless an exception applies. (Cal. Code Regs., tit. 14, § 15300.2.) A categorical exemption may not be used where there is a reasonable possibility that the activity will result in a significant effect due to unusual circumstances, contribute to a cumulatively significant impact, affect a scenic highway, be located on a hazardous waste site, or cause substantial adverse changes to historical resources. CARB has considered the applicability of these exemption exceptions and finds that substantial evidence in the record supports a determination that none apply to the Project. As explained below, each exemption is supported by substantial evidence and would reasonably apply to the Project, such that no further environmental review is required.

---

[159] CARB, Executive Summary, 2022 Scoping Plan for Achieving Carbon Neutrality (2022) at pp. 10-11. Available at: *https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp-es.pdf*.
[160] 2022 Scoping Plan Update at p. 135.
[161] Id at 7-10.
[162] Id. at p. 1. See also CARB, 2022 Scoping Plan for Achieving Carbon Neutrality (2022) at pp. 55-56, 100. Available at: *https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf*.
[163] Id. at pp. 73, 109, 138, 143, 151, 155, 175.

1. Statutory Exemption—Public Resources Code Section 21080, Subdivision (b)(4)

Statutory exemptions are created by the Legislature, and a project within such an exemption is generally not subject to CEQA, even if it may significantly affect the environment (Pub. Res. Code, § 21080.) The Project is exempt under Public Resources Code section 21080, subdivision (b)(4), which covers "specific actions necessary to prevent or mitigate an emergency." AB 1594 (Stats. 2023, ch. 585) mandates CARB to ensure that "[a]ny state regulation that seeks to require, or otherwise compel, the procurement of medium- and heavy-duty zero-emission vehicles shall authorize public agency utilities to purchase replacements for traditional utility-specialized vehicles that are at the end of life, as determined by the State Air Resources Board in consultation with public agency utilities, when needed to maintain reliable service and respond to major foreseeable events, including, but not limited to, severe weather, wildfires, natural disasters, and physical attacks, without regard to the model year of the vehicle being replaced." (Veh. Code, § 28500, subd. (b); Stats. 2023, ch. 585, § 3.) Public agency utilities provide 25% of California's electricity and 90% of its residential water. Specific actions include defining utility-specialized vehicles, adjusting Daily Usage Exemptions, and requiring electric power take-off (ePTO) bidding. CARB's compliance is effectuated through amendments providing that "[u]ntil January 1, 2028, a public agency utility may request an exemption for a vehicle that needs replacement before the end of its useful life to maintain reliable service and respond to major foreseeable events, including severe weather, wildfires, natural disasters, and physical attacks, as determined by CARB in consultation with the public agency utility, if CARB finds that a suitable zero-emission vehicle replacement is not available and the lack of a suitable zero-emission vehicle replacement would result in a significant risk to public health, safety, or welfare, effective October 1, 2024, and Proposed SLG Amendments set for September 25, 2025, which support reliability during wildfires and disasters.

In this case, statutory interpretation principles, as reaffirmed in *Working Families of Monterey County v. King City Planning Comm'n* (2024) 103 Cal.App.5th 344, require giving regulatory language its plain, commonsense meaning, avoiding extra-textual requirements, and presuming distinct terms in different sections carry different meanings (id. at pp. 356-357). Section 21080, subdivision (b)(4) does not require a declared emergency, and courts have applied it to preventive actions or mandated projects with tight timelines. In *Castaic Lake Water Agency v. City of Santa Clarita* (1998) 65 Cal.App.4th 1357, the exemption applied to preventive water facility repairs without a declared emergency, mitigating a "clear and imminent danger." (id. at pp. 1364-1365.) *Cf. Save Our Capitol! v. Dep't of Gen. Servs.* (2023) 87 Cal.App.5th 655, a legislatively mandated Capitol renovation with expedited judicial review procedures was not exempt because the Legislature imposed specific CEQA requirements. Similarly, *CREED-21 v. City of San Diego* (2015) 234 Cal.App.4th 488 upheld an emergency exemption for storm drain repairs based on an imminent risk, without a formal declaration, noting the exemption's purpose to bypass CEQA for urgent actions. (id. at pp. 501-502.) AB 1594's deadlines (October 1, 2024; September 25, 2025) and preventive focus on wildfire response reflect legislative intent to expedite compliance, inferring a CEQA waiver, consistent with these precedents. (*Working Families*, supra, 103 Cal.App.5th at p. 357 [courts "may not broaden or narrow the scope" by reading in absent terms].)

Here, legislative intent inferring CEQA exemption applies is reinforced by AB 1594's history and the Governor's Executive Order (EO N-79-20), which sets urgent ZEV goals: 100%

medium- and heavy-duty ZEVs by 2045 where feasible and 2035 for drayage trucks. (EO N-79-20, p. 2.) EO N-79-20's calls for "accelerated actions" to address the "climate change crisis" aligns with AB 1594's aim to ensure utility reliability during "major foreseeable events" like wildfires. (EO N-79-20, p. 1; Veh. Code, § 28500, subd. (b).) The Senate Transportation Committee analysis emphasizes utilities' "rapid response" needs, noting ACF's 13-year "useful life" misaligns with shorter vehicle cycles. (Sen. Com. on Transportation, Medium- and Heavy-Duty Zero-Emission Vehicles: Public Agency Utilities (July 7, 2024).) A legislative letter urging CARB to avoid compromising "essential public services" underscores urgency. (Assembly Transportation Committee, April 2024, p. 5.) The Senate Floor Analysis confirms AB 1594 "narrowly refines" exemptions, with unanimous support (80-0 Assembly; Senate Floor Analyses, quoting 16-0 Senate Transportation, pp. 6, 7.) AB 1594's directives to allow replacements "without regard to model year" and use "comprehensive usage data" (Veh. Code, § 28500, subd. (b)), paired with EO N-79-20's "expeditious implementation" (EO N-79-20, p. 3), suggest CEQA review would delay vital amendments. Unlike *Save our Capitol!,* the absence of express legislative provisions as to CEQA applicability waiver accords with the plain meaning of the statute, as interpreted by California courts, inferring waivers from urgent mandates. (Pub. Res. Code, § 21080, subd. (b)(4); *Napa Citizens for Honest Gov't v. Napa Cnty. Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 356–359; *Sierra Club v. Cal. Coastal Comm'n* (2005) 35 Cal.4th 839, 854–856; *Castaic Lake*, supra, 65 Cal.App.4th at pp. 1364-1365; *CREED-21*, supra, 234 Cal.App.4th at pp. 501-502; *Save Our Capitol!*, supra, 87 Cal.App.5th at pp. 678-680; *San Diego Navy Broadway Complex Coal. v. City of San Diego* (2010) 185 Cal.App.4th 924, 936–938.)

Pursuant to CEQA Guidelines, section 15062, there is substantial evidence to sustain a finding that the Project is exempt from CEQA under Public Resources Code section 21080, subdivision (b)(4), as they constitute specific actions mandated by statute to ensure public agency utility reliability and emergency response capability. Based on the administrative record, including the Initial Statement of Reasons and legislative history of AB 1594, CARB determines there is no substantial evidence indicating that the Project will have a significant effect on the environment, consistent with CEQA Guidelines, section 15064, subdivision (f).

2. Class 7 and 8 Categorical Exemptions—Actions by Regulatory Agencies for Natural Resources and Environmental Protection

The Project is categorically exempt from CEQA pursuant to Classes 7 and 8 of the CEQA Guidelines. (Cal. Code Regs., tit. 14, §§ 15307, 15308.) These exemptions encompass actions by regulatory agencies, duly authorized by state law, to ensure the maintenance, restoration, enhancement, or protection of natural resources and the environment, provided such actions are conducted through a regulatory process fortified with robust environmental safeguards. The Project, comprising the Proposed SLG Amendments, Proposed LCFS Amendments, and the Proposed Repeal, unequivocally satisfy these criteria, as substantiated by the administrative record.

Here, the Proposed SLG Amendments are expressly mandated by Assembly Bill (AB) 1594 (Garcia, Stats. 2023, ch. 585), which directs CARB to amend the ACF regulation to provide tailored flexibility for public agency utilities. AB 1594 requires CARB to define "traditional utility-specialized vehicles," authorize their early replacement without regard to model year, and

permit comprehensive usage data for Daily Usage Exemption applications. These provisions enable utilities to purchase to ZEVs while maintaining reliable services, reducing emissions of GHG, NOx, and PM2.5. The Proposed LCFS Amendments enhance crediting for hydrogen refueling infrastructure, supporting ZEV adoption. The Proposed Repeal includes the repeal of Drayage and High Priority Fleet requirements in the ACF Regulation. Crucially, this action clarifies regulatory obligations to ensure the maintenance, restoration, enhancement, or protection of natural resources and the environment by providing a clear target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. Collectively, these actions advance California's environmental goals, as articulated in the 2022 Scoping Plan, 2022 SIP Strategy, 2020 MSS, and Governor Newsom's Executive Order N-79-20 (Sept. 23, 2020), which seeks to achieve carbon neutrality by 2045. (*See Save Our Carmel River v. Monterey Peninsula Water Mgmt. Dist.* (2006) 141 Cal.App.4th 677 [upholding Class 7 exemption for regulatory water conservation program protecting natural resources]; *Save the Plastic Bag Coalition v. County of Marin* (2013) 218 Cal.App.4th 209 [upholding Class 7 and 8 exemptions for plastic bag ban reducing waste]; *cf*. *Save Our Big Trees v. City of Santa* Cruz (2015) 241 Cal.App.4th 694 [rejecting exemptions where city failed to show environmental enhancement for tree removal amendments]; *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086 [challenger bears burden for unusual circumstances].) Here, unlike *Save Our Big Trees*, the ISOR provides robust evidence of emission reductions and procedural rigor, including a gubernatorial executive order, legislative directive, as well as CARB's implementation of these legislative and gubernatorial directives through public workshops, consultations with utility associations (e.g., Association of California Water Agencies), and environmental analyses, embedding the protections requisite for Classes 7 and 8 exemptions.

Substantial evidence in the ISOR supports CARB's determination that no exceptions apply under Public Resources Code section 21084 or Title 14 CCR § 15300.2. There is no evidence of "unusual circumstances" under section 15300.2(c), as the Project involves no direct environmental impacts. (*Save Our Carmel River, supra*, 141 Cal.App.4th at pp. 695-696 [no unusual circumstances for speculative indirect impacts*]; Save the Plastic Bag Coalition, supra*, 218 Cal.App.4th at pp. 224-225 [no impacts from potential paper bag increase].) The Project maintains the status quo by removing unenforceable provisions, avoiding regulatory confusion without environmental degradation. Unlike *Save Our Big Trees*, where amendments risked physical tree removals, CARB's actions promote ZEV adoption with air quality benefits. There are no "cumulative impacts" under section 15300.2(b), as the amendments are part of a coordinated emission reduction strategy. (*Save Our Carmel River, supra*, 141 Cal.App.4th at p. 696.) Accordingly, there is substantial evidence for CARB to declare the Proposed Amendments exempt pursuant to Class 7 and Class 8 exemptions, based on the administrative record in general and the ISOR in particular.

3. Class 1 Categorical Exemption—Existing Facilities

The Project is exempt from CEQA under the Class 1 categorical exemption, applying to "the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use." (Cal. Code Regs., tit. 14, § 15301.) The Proposed SLG Amendments facilitate turnover within current operations and the Proposed Repeal avoids potential impacts disclosed in the Final ACF EA as these sections

would no longer be included in the regulation. The Proposed LCFS Amendments enhance crediting for hydrogen stations which could result in minor alterations to existing facilities. Therefore, the Project is exempt as a minor alteration. (Cal. Code Regs., tit. 14, § 15301; *Save the Plastic Bag Coal. v. City of Manhattan Beach* (2011) 52 Cal.4th 155, 174–176 [minor operational changes]; *San Lorenzo Valley Cmty. Advocates v. San Lorenzo Valley Unified Sch. Dist.* (2006) 139 Cal.App.4th 1356, 1380–1382 [facility relocation].)

Here, the lead agency has considered the exceptions to categorical exemptions under California Code of Regulations, tit. 14, section 15300.2, and finds that substantial evidence in the record supports a determination that none apply. The Project does not involve unusual circumstances, significant cumulative impacts, or other conditions that would preclude use of the Class 1 exemption. Therefore, there is substantial evidence in the record to support a finding that the Class 1 categorical exemption (Cal. Code Regs., tit. 14, § 15301) applies because the Project consists of minor modifications to existing facilities with no potential for significant environmental effects. Accordingly, it would be reasonable for the lead agency to conclude that the Project is exempt under this provision and that no further environmental review is required.

4. Class 11 Categorical Exemption—Accessory Structures

The Project is exempt from CEQA under the Class 11 categorical exemption, applying to "the construction, or placement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities." (Cal. Code Regs., tit. 14, § 15311.) The Proposed LCFS Amendments enhance crediting for hydrogen stations which could result in minor alterations to existing facilities. The Project is exempt as minor accessory additions. (Cal. Code Regs., tit. 14, § 15311; *Citizens for Envtl. Responsibility v. State of Cal*. (2015) 242 Cal.App.4th 555, 573–575 [solar panels]; *Don't Cell Our Parks v. City of San Diego* (2018) 21 Cal.App.5th 338, 351–353 [rejecting exemption for impacts].)

The Project does not involve unusual circumstances, sensitive locations, or other disqualifying factors. There is substantial evidence in the record to support a finding that the Class 11 categorical exemption (Cal. Code Regs., tit. 14, § 15311) applies because the Project consists of minor accessory retrofits with no potential to cause a significant environmental effect. Accordingly, it would be reasonable for the lead agency to conclude that the Project is exempt under this provision and that no further environmental review is required.

5. Common Sense Exemption—General Rule

The Project is exempt from CEQA under the common-sense exemption, which applies where "it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." (Cal. Code Regs., tit. 14, § 15061, subd. (b)(3).) Here, the Project consist of regulatory amendments that apply to existing public agency utility fleets and infrastructure, without involving new construction, physical expansion, or land disturbance. The electric power take-off bid requirement and LCFS crediting adjustments promote lower-emission technologies, with caps and design constraints that either limit or prevent environmental impacts. The LCFS crediting adjustments proposed in these amendments are the same values originally analyzed under the Final LCFS EIA. Therefore, any potential new or expansion of existing hydrogen stations would not pose any additional environmental impacts outside of what was already analyzed and disclosed. The repeal of inoperative drayage

provisions maintains existing regulatory conditions and avoids physical environmental change. Here, the Project qualifies for exemption under California Code of Regulations, title 14, section 15061, subdivision (b)(3). The common-sense exemption is not subject to the exceptions listed in section 15300.2, which apply only to categorical exemptions. (See *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1097.) Instead, the applicable standard is whether it can be seen with certainty that there is no possibility the activity may have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15061, subd. (b)(3); *Muzzy Ranch Co. v. Solano County Airport Land Use Com*. (2007) 41 Cal.4th 372, 387–389.) Based on the record before it, there is substantial evidence for the lead agency to find that the Project does not have the potential to result in a significant environmental effect, either directly or indirectly, and that no substantial evidence supports a fair argument to the contrary. Therefore, no further environmental review is required.

6. Determination

For the foregoing reasons, there is substantial evidence in the record to support a finding by CARB, as the lead agency under CEQA, that the Project is exempt from the CEQA. The Project qualifies for exemption under the statutory exemption set forth in Public Resources Code section 21080, subdivision (b)(4), as a mandated action necessary to ensure public safety and utility reliability during emergencies.

In addition, the Project also qualifies for exemption under several categorical exemptions identified in the CEQA Guidelines section 15301 (Class 1 – Existing Facilities), section 15308 (Class 8 – Environmental Protection), and section 15311 (Class 11 – Accessory Structures), as well as the common-sense exemption under section 15061, subdivision (b)(3).

The administrative record generally reflects that the Project complies with each exemption independently and separately, and the ISOR provides a sufficient basis for CEQA compliance. Substantial evidence demonstrates that the Project involves no expansion of an existing use, and includes regulatory actions that reduce emissions, compared to the existing conditions baseline under CEQA of 2024, and support zero-emission technologies. Accordingly, it would be reasonable for CARB to conclude that the Project is exempt from CEQA, and that no further environmental review is required.

F. Subsequent Environmental Review Analysis

This section serves as a substitute document equivalent to an addendum for both the proposed ACF Amendments and the Proposed LCFS Amendments.

1. Legal Standards

When considering modifications to a regulation for which a substitute document equivalent to an Environmental Impact Report (EIR) or negative declaration had previously been prepared, CARB looks to Public Resources Code section 21166 and CEQA Guidelines section 15162 for guidance on the requirements for subsequent or supplemental environmental review. (Cal. Code Regs., tit.17, § 60004.4.)

CEQA Guidelines section 15162 states:

(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If a subsequent or supplemental EIR or negative declaration is not required, the lead agency may document its decision and supporting evidence in an addendum (Cal. Code Regs., tit. 14, § 15164 (e)). The addendum and lead agency's findings should include a brief explanation, supported by substantial evidence, of the decision not to prepare a subsequent or supplemental EIR or negative declaration (Cal. Code Regs., tit. 14, § 15164(e)). An addendum need not be circulated for public review but must be considered by the lead agency prior to making a decision on the project (Cal. Code Regs., tit. 14, § 15164(c), (d)).

2. Basis for Determination

a. Advanced Clean Fleets Regulation

CARB has determined that the Proposed SLG Amendments and Proposed Repeal do not involve any changes that result in any new significant adverse environmental impacts or a substantial increase in the severity of the significant adverse impacts previously disclosed in the Final ACF EA. The Proposed SLG Amendments clarify definitions and criteria necessary for compliance and do not alter the compliance responses analyzed under the Final ACF EA. The Proposed Repeal would remove HPF Fleet and Drayage Truck requirements of the ACF

Regulation for which CARB did not receive federal waivers, which would not alter the compliance responses under the Final ACF EA. Further, there are no changes in circumstances or new information that would otherwise warrant any subsequent or supplemental environmental review. The Final ACF EA adequately addresses the implementation of the ACF regulation as modified by the Proposed ACF Amendments, and no additional environmental analysis is required. The basis for CARB's determination that none of the conditions requiring further environmental review are triggered by the proposed modifications is based on the following analysis.

- *There are no substantial changes to the regulation previously analyzed in the Environmental Analysis which require major revisions to the Environmental Analysis involving new significant environmental effects or a substantial increase in the severity of previously identified effects.*

The Proposed ACF Amendments would remove some provisions of the regulation, while preserving and clarifying the SLG-focused aspects of the regulation. Because there is no substantive change to the way in which regulated SLG entities operate, the Proposed ACF Amendments will not result in additional physical changes to the environment beyond what would already occur under the existing regulation. As shown in Figure 1 above, the cumulative number of ZEVs purchased by SLG fleets never exceeds the sales requirements driven by the ACT Regulation in any year. The compliance responses from SLG fleets implementing the ACF regulation is expected to be a fraction of the magnitude of the compliance responses that would have occurred from the drayage, high priority and federal fleets portion of the ACF regulation, simply because of the dramatically lower number of affected vehicles required to be replaced with ZEV. Also, expected emission reductions of NOx, fine particulate matter and GHG from implementing the ACT regulation are shown as the Adjusted Legal Baseline in Figure 8, Figure 9 and Figure 10, respectively. Emissions from implementing the SLG portion of the ACF regulation are not expected to increase above those shown as the Adjusted Legal Baseline.

The Proposed ACF Amendments do not incentivize or otherwise drive new project types. Therefore, CARB staff does not anticipate that the Proposed ACF Amendments will cause new significant environmental effects or a substantial increase in the severity of previously identified effects in the Final ACF EA.

- *There are no substantial changes with respect to the circumstances under which the regulation is being undertaken which require major revisions to the previous Environmental Analysis involving new significant environmental effects or a substantial increase in the severity of previously identified effects.*

There are no substantial changes to the environmental setting or circumstances in which the Proposed ACF Amendments are being implemented compared to that analyzed in the Final ACF EA. As explained above, the Proposed ACF Amendments merely clarify definitions and criteria for a limited number of circumstances for public utility agencies and do not substantially alter the compliance responses of the regulated entities or result in any changes that significantly affect the physical environment. The amendments also rescind other components of the regulation, as described above, and rescinding those components is not expected to result in any emissions increases above the existing conditions baseline. As described in the

Air Quality chapter above, and as shown in the figures in that chapter, the Proposed Repeal component of this proposed rulemaking will result in maintaining the status quo and will not result in higher emissions than in 2024, the first compliance year for the ACF regulation. The proposed amendments are therefore not projected to result in any emissions increases beyond the existing conditions baseline under CEQA of 2024.

- *There is no new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous Environmental Analysis was certified as complete, that changes the conclusions of the Environmental Analysis with regard to impacts, mitigation measures, or alternatives.*

No new information of substantial importance has become available to CARB staff since the Final ACF EA was certified. Therefore, the conclusions found the Final ACF EA about the compliance responses for the ACF regulation or potential environmental impacts to any resource areas have not changed.

In summary, no supplemental or subsequent environmental analysis is required for the Proposed ACF Amendments because, as described above, the proposed changes do not result in any new environmental impacts or in a substantial increase in severity to the impacts previously disclosed in the Final ACF EA. Further, there are no changes in circumstances or new information that would otherwise warrant an additional environmental review.

b. Low Carbon Fuel Standard Regulation

CARB has determined that the Proposed LCFS Amendments do not involve any changes that result in any new significant adverse environmental impacts or a substantial increase in the severity of the significant adverse impacts previously disclosed in the Final LCFS EIA. The proposed modifications to the LCFS regulation do not alter the compliance responses analyzed under the Final LCFS EIA for the LCFS regulation. Further, there are no changes in circumstances or new information that would otherwise warrant any subsequent or supplemental environmental review. The Final LCFS EIA adequately addresses the implementation of the LCFS regulation as modified by the Proposed LCFS Amendments, and no additional environmental analysis is required. The basis for CARB's determination that none of the conditions requiring further environmental review are triggered by the proposed modifications is based on the following analysis.

- *There are no substantial changes to the regulation previously analyzed in the Environmental Analysis which require major revisions to the Environmental Analysis involving new significant environmental effects or a substantial increase in the severity of previously identified effects.*

The Proposed LCFS Amendments to the LCFS regulation align with what was already analyzed under the Final LCFS EIA for the LCFS regulation. The Proposed LCFS Amendments modify the derating factors for LMD-HRI by increasing the percentages used to calculate crediting while maintaining the credit limits an individual station can accrue as well as the total number of credits generated under the LCFS program. These proposed percentages are identical to what was analyzed in the Final LCFS EIA. As such, the Final LCFS EIA already

analyzed the potential impacts of the compliance responses anticipated by these Proposed LCFS Amendments, including the installation and operation of hydrogen refueling stations, which may require increased infrastructure projects for hydrogen refueling on undeveloped land or on existing refueling or parking footprints. The record does not indicate the Proposed LCFS Amendments would cause any additional significant environmental impacts or increase the severity of any identified environmental impacts because the proposed percentage increases are identical to what was already analyzed in the Final LCFS EIA. There is no substantive change to the way in which regulated entities operate, and the Proposed LCFS Amendments will not result in additional physical changes to the environment beyond what was already analyzed and disclosed in the Final LCFS EIA. Therefore, CARB staff does not anticipate that the Proposed LCFS Amendments will cause new significant environmental effects or a substantial increase in the severity of previously identified effects in the Final LCFS EIA.

- *There are no substantial changes with respect to the circumstances under which the regulation is being undertaken which require major revisions to the previous Environmental Analysis involving new significant environmental effects or a substantial increase in the severity of previously identified effects.*

There are no substantial changes to the environmental settings or circumstances in which the proposed modifications to the LCFS regulation are being implemented compared to that analyzed in the Final LCFS EIA. As explained above, the Proposed LCFS Amendments merely align the regulation with what was already analyzed under the Final LCFS EIA. Therefore, the Proposed LCFS Amendments do not substantially alter the compliance responses of the regulated entities or result in any changes that significantly affect the physical environment.

- *There is no new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous Environmental Analysis was certified as complete, that changes the conclusions of the Environmental Analysis with regard to impacts, mitigation measures, or alternatives.*

There is no new information of substantial importance that has become available to CARB staff since the Final LCFS EIA was certified in November 2024, that would alter any of the conclusions of the Final LCFS EIA relating to significant environmental impacts. Additionally, there are no feasible mitigation measures or alternatives that were previously found to be infeasible, nor any new mitigation measures or alternatives considerably different from those previously considered in the Final LCFS EIA. As discussed above, the potential compliance responses to the proposed modifications were analyzed under the Final LCFS EIA, so the mitigation measures proposed in the Final LCFS EIA would similarly apply here. Therefore, the conclusions found the Final LCFS EIA about the compliance responses for the LCFS regulation or potential environmental impacts to any resource areas have not changed.

In summary, no supplemental or subsequent environmental analysis is required for these proposed modifications to the LCFS regulation because, as described above, the Proposed LCFS Amendments do not result in any new environmental impacts or in a substantial increase in severity to the impacts previously disclosed in the Final LCFS EIA. Further, there

are no changes in circumstances or new information that would otherwise warrant an additional environmental review.

VIII. Environmental Justice

State law defines environmental justice as the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (Gov. Code, § 65040.12, subd. (e)(1)). Environmental justice includes, but is not limited to, all of the following: (A) The availability of a healthy environment for all people. (B) The deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities. (C) Governmental entities engaging and providing technical assistance to populations and communities most impacted by pollution to promote their meaningful participation in all phases of the environmental and land use decision making process. (D) At a minimum, the meaningful consideration of recommendations from populations and communities most impacted by pollution into environmental and land use decisions (Gov. Code, § 65040.12, subd. (e)(2)). The Board approved its Environmental Justice Policies and Actions (Policies) on December 13, 2001, to establish a framework for incorporating environmental justice into CARB's programs consistent with the directives of State law. These policies apply to all communities in California but are intended to address the disproportionate environmental exposure burden borne by low-income communities and communities of color. Environmental justice is one of CARB's core values and fundamental to achieving its mission.

Public agency utilities operate traditional utility-specialized vehicles in most communities across California. The mean wages for utility workers in California range from $21 to $72.[164] Studies in environmental justice have shown inequalities that associate poverty with greater susceptibility to the impacts of air pollution exposure.[165] Specifically in the US, communities with lower socio-economic status are exposed to higher levels of major air pollutants.[166] Based on this set of factors, it stands to reason that lower-income utility workers as well as those working in areas overburdened by sources of pollution and poor air quality are most heavily impacted by idle emissions from traditional utility-specialized vehicles.

As stated in Chapter VII Environmental Justice of the 2022 ISOR,[167] medium- and heavy-duty mobile source vehicles emit harmful pollutants both while in transit and during stationary operations across California, but frequently congregate at warehouse and distribution centers, seaports, intermodal railyards, and other locations that are commonly located near schools,

---

[164] EDD Occupational Employment and Wage Statistics Dashboard - SOC code 49-0000 in year 2024. (weblink: *https://labormarketinfo.edd.ca.gov/data/oews-dashboard.html*, last accessed on November 20,2024).
[165] Rentschler, J., Leonova, N., Global air pollution exposure and poverty. *Nat Commun* 14, 4432, July 22, 2023, (web link: *https://doi.org/10.1038/s41467-023-39797-4.*, last accessed November 20, 2024).
[166] Hajat A, Hsia C, O'Neill MS. Socioeconomic Disparities and Air Pollution Exposure: a Global Review. Curr Environ Health Rep. 2015 Dec;2(4):440-50. doi: 10.1007/s40572-015-0069-5. PMID: 26381684; PMCID: PMC4626327, December 2015, (weblink: *Socioeconomic Disparities and Air Pollution Exposure: A Global Review - PMC*, last accessed November 20, 2024).
[167] CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf*, last accessed October 18, 2024).

hospitals, elder care facilities, and residential neighborhoods. The accelerated deployment of medium- and heavy-duty ZEVs in low-income and DACs eliminates tailpipe emissions, decreases petroleum use, reduces energy consumption, and helps California achieve its air quality and climate protection goals.

The Proposed Repeal would not reduce exposure to air pollutants or reduce negative health impacts from exposure to toxic air contaminants, nor would it increase exposure because the portions of ACF that would be repealed have not been implemented and, given current U.S. EPA inaction, are unlikely to be implemented for the foreseeable future. For more information, please see the chapter on Benefits Anticipated from the Regulatory Action, Including the Benefits or Goals Provided in the Authorizing Statute. Given the developments described above that have led to this Proposed Repeal, communities will not experience those pollution reduction benefits. CARB intends, however, to continue to work toward reducing these emissions. CARB remains steadfastly committed to this objective of leveraging its overall portfolio of programs to meet the State's air quality and climate goals – regardless of the success of any individual measure. Despite the Proposed Repeal under consideration here, CARB continues to work toward achieving all air quality and climate goals identified in the State Implementation Plan Strategy and Scoping Plan.

IX. Economic Impacts Assessment

The Proposed Repeal is not expected to have a significant economic impact on businesses. On July 6, 2023, before the ACF regulation was in effect, CARB issued a letter to notice regulated entities of the delay in enforcement of parts of the ACF regulation to OEMs and their customer fleets that buy and sell model year 2024 and 2025 engines outside California and then operate them in California.[168] The ACF regulation was approved by OAL, filed with the Secretary of State and made effective October 1, 2023. Less than 3 months later, on December 28, 2023, CARB widely circulated a broad notice to affected fleets of CARB's decision to delay any enforcement action on the drayage or high priority fleet reporting requirements or drayage registration prohibitions until U.S. EPA granted a preemption waiver applicable to those regulatory provisions or determined a waiver is not necessary. This letter was updated on October 25, 2025 to let regulated entities know they could voluntarily request extensions and exemptions under the ACF regulation until U.S. EPA granted a preemption waiver or determined a waiver is not necessary.[169]

Businesses that have taken steps to comply with the ACF regulation have done so voluntarily. The Proposed Repeal will give businesses assurances that they will not need to comply with this regulation in the future, and the costs to businesses remains the same as before ACF was adopted. A similar analysis holds for economic benefits: no regulated actors were required to take steps beyond what would be expected under the BAU scenario for the Proposed Repeal since ACF's Legal Baseline, used to model both cost and benefits, has remained the same since the ACF was adopted. The Proposed Repeal maintains this status-quo.

---

[168] CARB, CARB Response to EMA Request for Enforcement Discretion Under California Code of Regulations, Title 13 Section 2015(r) (weblink: *https://ww2.arb.ca.gov/resources/documents/carb-response-ema-request-enforcement-discretion*, last accessed March 18, 2025).

[169] CARB, Advanced Clean Fleets Enforcement Notice. December 28, 2023; updated October 25, 2024. (web link: *https://ww2.arb.ca.gov/sites/default/files/2024-10/241025acfnotice_ADA.pdf*, last accessed March 18, 2025).

The amendments to the LCFS program will provide stronger crediting support for hydrogen stations and more adequately supports development of stations that can accommodate the refueling demand of larger medium-duty hydrogen FCEV. These amendments are not expected to result in costs or savings to hydrogen station developers as LMD-HRI credits for each company and in aggregate across the LCFS program are unlikely to change as a result of this provision.

The remaining parts of this chapter explains the cost analysis which includes both the Proposed SLG Amendments and the Proposed Repeal as the Proposed Amendments. As described in the

Estimated Direct Costs section, staff estimate the Proposed SLG Amendments will result in an annual cost to businesses of up to $6 million and cost savings of up to $14 million in 2028, the year with the highest annual impact. When considering additional indirect and induced impacts, staff estimate the total economic impact will be between $25 and $50 million.

A. Estimated Direct Costs

The Proposed Amendments to the ACF regulation would allow traditional utility-specialized vehicles owned and operated by public agency utilities early access to the ZEV Purchase and Daily Usage Exemptions. These exemptions allow the purchase of an ICE vehicle if a ZEV is unavailable, or if the battery capacity of an available BEV does not meet the fleet's daily usage needs. The total statewide costs of the Proposed Amendments assumes fleets will take full advantage of the exemptions and includes the upfront capital costs for the replacement ZEV and their associated infrastructure, or if an exemption is given, then the replacement ICE; fueling costs; operating expenses; and other cost elements.

The cost analysis for the Proposed Amendments are based on the original analysis for the ACF regulation's adoption. All 2021 dollar year cost numbers used in the ACF rulemaking were adjusted for inflation using California Consumer Price Index (CPI) and are presented in 2023 constant dollars unless otherwise noted.[170]

There are several rebate and voucher programs in California that offset some or all the incremental costs for ZEVs and supporting infrastructure; however, none of these incentives are included in the cost analysis due to uncertainty as to which fleets may utilize funding and uncertainty in ongoing funding. Separate from CARB's incentive programs, the LCFS regulation (Cal. Code Regs., tit. 17, §§ 95480 through 95490, 95481, and 95486, through 95503) is a regulatory program that allows some fleets that dispense low carbon fuels to generate credits and sell them on the open market to generate revenue. Because of the regulatory certainty associated with the generation and use of credits by entities under the LCFS regulation, staff models credit revenue from the LCFS regulation for those entities that own and operate charging or hydrogen fueling stations.

1. Vehicle Population

In this analysis, vehicle populations were taken from an August 5, 2024, snapshot of CARB's TRUCRS.[171] At the time the data was extracted there was a sufficient compliance rate with the

[170] California Department of Industrial Relations. California Consumer Price Index (1955-2014). Accessed June 5, 2024 (web link: *https://www.dir.ca.gov/oprl/CPI/EntireCCPI.PDF*, last accessed on October 23, 2024).
[171] CARB's Truck Regulations Upload, Compliance, and Reporting System (TRUCRS) downloaded on September 5, 2024. *https://ww2.arb.ca.gov/our-work/programs/truck-bus-regulation/trucrs-reporting-information*.

initial reporting into TRUCRS for SLG fleets. Staff utilized TRUCRS data which provides up to date information on vehicles actively operated by public agency utility fleets over other available data sources such as DMV where government fleet vehicle registrations are not annually updated. To extract the active vehicles in the fleet, staff compiled a list of public agency utility fleet entities from communication with trade groups and through their member directories, including California Municipal Utilities Association (CMUA),[172] Southern California Public Power Authority (SCPPA) and Northern California Power Agency (NCPA),[173] Association of California Water Agencies (ACWA),[174] California Water Association (CWA)[175] as well as from sister agencies — State Water Resources Control Board,[176] California Energy Commission (CEC),[177] and California Public Utilities Commission (CPUC).[178] The analysis is based on the ICE vehicles owned by the regulated entities identified in TRUCRS. Vehicles with body configurations designed to primarily carry cargo or passengers were excluded, these included: bus, van, and light-duty package delivery vehicle. Staff also excluded common vehicles not used by public agency utility fleets, these included: tractor, garbage, and sweeper configurations. The remaining trucks included ICE vehicles with the following configurations: boom, box, bucket, chipper, concrete mixer, digger derrick, dump, pickup, flatbed, stake, service/work, roll-off, tank, tow, and vacuum.

City and county fleets often report for various departments or divisions under the same TRUCRS identification numbers. For example, a city manager with multiple departments can only claim traditional utility-specialized vehicles in their Water and Power department operating under Section 224.3 of the PUC, and not their general maintenance vehicles used by the Public Works department. Staff calculated a scaling factor of 0.35 using data from a large city fleet that reported separately for their Water and Power, and their Public Works divisions. This scaling factor was applied to cities which had a known public agency utility division within their larger fleet.

The inventory was binned into those vehicles that met the proposed definition of a “traditional utility-specialized vehicle" and all others. Examples of traditional utility-specialized vehicle configurations include vehicles commonly known as a digger derrick, bucket truck, underground cable puller, overhead cable puller, crane, aerial boom, water tanker truck, dump truck, line clearance tree trimming truck with a bucket arm, insulator washer, grapple loader, hydro excavator, mobile water purification truck, and 4WD/6WD versions of any configuration.

---

[172] California Municipal Utilities Association (CMUA) Members list (weblink: https://www.cmua.org/members downloaded on March 18, 2024).
[173] American Public Power Association (APPA) (weblink: https://www.publicpower.org/public-power-california downloaded on March 19, 2024).
[174] Association of California Water Agencies (ACWA) Member directory (weblink: https://www.acwa.com/about/directory/ downloaded on March 18, 2024).
[175] Regulated Water Utilities in California - California Water Association (weblink: https://calwaterassn.com/about-cwa/regulated-water-utilities-in-california/, downloaded on March 18, 2024).
[176] State Water Resources Control Board (SWRCB). September 2021. Safe Drinking Water Plan for California (weblink: https://www.waterboards.ca.gov/drinking_water/safedrinkingwaterplan/ downloaded March 19, 2024).
[177] California Energy Commission, Publicly Owned Utility Report (weblink: https://www.energy.ca.gov/data-reports/reports/energy-storage-targets-publicly-owned-utilities/publicly-owned-utility-reports downloaded on March 19, 2024).
[178] California Public Utilities Commission (CPUC). Regulated Water and Sewer Companies from 2019 Annual Reports (weblink: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/water-division/reports/wd-landing-page/water-utilities--total-connections.pdf, downloaded on March 19, 2024).

First, the proposed definition for a traditional utility-specialized vehicle only includes GVWR Class 3 and up. All Class 2b vehicles were put in the other category. Then, for a vehicle to qualify as a traditional utility-specialized vehicle, it must be equipped with PTO or with 4WD/6WD. Staff separated out trucks with PTO into the "traditional utility-specialized vehicle" category using TRUCRS body types. For the remaining categories of pickup, flatbed, stake, service/work, roll-off, tank and tow, staff found that an average of 20% of these categories were equipped with all wheel drive using information collected through the ACT regulation's LER requirement.[179] Staff applied this 0.2 ratio to these truck configurations and allocated these between the traditional utility-specialized vehicle category and the other truck category. Finally, the two separate populations of traditional utility-specialized vehicles and all others were each grouped into 4 GVWR Classes (2b - 3, 4 - 5, 6 - 7, and 8).

2. Vehicle Turnover

The economic assessment assumes all fleets are following the ZEV Purchase Schedule, as simplification. About 15% of SLG fleets have already elected to permanently comply using the more flexible ZEV Milestone Option and more are likely to do so in the future. The ZEV Purchase Schedule requires SLG fleets to purchase at least 50% of their annual vehicle purchases as ZEVs as of January 1, 2024, and beginning January 1, 2027, 100% of purchases must be ZEVs. The analysis period is from 2026, which is the earliest effective date of these Proposed SLG Amendments, to at least one year after full implementation or 2029.

As of December 2023, in-use pickup trucks had the highest average turnover age at 13.1 years, heavy trucks have the second highest average turnover age at 12.1 years and medium-duty trucks averaged 11.3 years when replaced.[180] Municipal and utility fleets replace most of their vehicles after 5, but before 10 years, with a higher percentage of vehicles kept over 10, than less than 5 years.[181] The median age when dump trucks are replaced is between 9 and 10 years, however some dump trucks (up to 10%) are over 15 years old when replaced.[182] Similarly, LER data for public agency utility fleets shows most vehicles, 18% are kept from 5 to 10 years, 56% are kept for 11 to 15 years, and 19% are kept from 15 to 20 years, with 7% kept beyond 20 years.

Table 9 displays public agency utility fleet LER data for bins of length of possession broken down by body type.[183] The data shows that the majority of body types are only kept as part of the fleet for 11 to 15 years and most vehicles are removed from the fleet before reaching 20 years.

Table 9: Weighted Average of Length of Possession by Vehicle Body Type

[179] CARB. (2021) Large Entity Reporting survey responses, available at *https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks/large-entity-reporting.*
[180] Department of Energy. FOTW #1362, Sept. 30, 2024: Pickup Trucks Had the Highest Average Age of All Vehicle Types in Operation in 2023. (web link: *https://www.energy.gov/eere/vehicles/articles/fotw-1362-sept-30-2024-pickup-trucks-had-highest-average-age-all-vehicle*, last accessed October 1, 2024).
[181] Work Truck. March 1, 2023. Fleet Purchasing Outlook 2023: Deferred Replacement & Growth (web link: *https://www.worktruckonline.com/10193814/fleet-purchasing-outlook-2023-deferred-replacement-growth*, last accessed December 10, 2024).
[182] Government Fleet. June 11, 2020. Understanding Fleet Age and Costs (web link: *https://www.government-fleet.com/10118478/understanding-fleet-age-and-costs*, last accessed on December 10, 2024).
[183] CARB, Large Entity Reporting survey responses, 2021, Large Entity Reporting survey responses.xls.

Body Type	Less than 4 years	5 to 10 years	11 to 15 years	16 to 20 years	More than 20 years
Boom/Bucket	0%	16%	59%	19%	7%
Crane	0%	16%	51%	26%	7%
Drill Rig	0%	4%	88%	7%	1%
Dump	0%	11%	52%	24%	13%
Flatbed Or Stake Bed*	10%	20%	51%	14%	5%
Pickup Bed*	36%	24%	27%	11%	2%
Service Body*	14%	22%	53%	10%	2%
Tank	0%	21%	40%	33%	5%
Tow	0%	8%	34%	55%	3%
Vacuum	0%	40%	41%	15%	4%
Van-Cargo*	48%	15%	25%	12%	1%
Water	0%	8%	58%	20%	13%

*These body types are considered other vehicle body types except for 20% that are assumed to have 4x4 or 6x4 and could meet the proposed definition of a traditional utility-specialized vehicle.

The ACF regulation specifies for SLG fleets using the ZEV Purchase Schedule that an existing vehicle must be at least 13 years old before it is eligible for a ZEV Purchase or Daily Usage exemption. For the Proposed SLG Amendments, staff modeled a portion of "traditional utility-specialized vehicles". Expected turnover by 10 years was used to represent a fleet taking advantage of the early access to exemptions and instead receive an exemption to purchase an ICE vehicle at 10 years of age. The population of traditional utility-specialized vehicles was adjusted by 19%. Based on data from the ACT LER shown in Table 9, 19% of the traditional utility specialized vehicles are expected to turnover by 10 years use this early access. The remainder of the traditional utility specialized vehicles will not have their turnover affected as they keep their vehicles longer than 13 years. Please note, the ZEV Purchase Schedule will allow a public agency utility to keep ICE vehicles as long as they wish. Indeed, LER data showed at least 7% of public agency utility's traditional utility-specialized vehicles are kept beyond a commercial vehicle's Senate Bill (SB) 1 guaranteed 18-years of useful life.

The Proposed SLG Amendments give early access to exemptions for traditional utility-specialized vehicles. The early access provision was modeled when the ICE vehicle reaches 10 years old where a fleet either replaces their existing ICE vehicle with a ZEV, or with a new ICE vehicle if it is granted an exemption. There are two exemptions that can be used to replace a vehicle:[184]

1. The ZEV Purchase Exemption allows a fleet owner to replace an existing ICE powered vehicle with a new ICE powered vehicle if a ZEV is not available to purchase in the same or next higher weight class with the same configuration as the vehicle needing to be replaced.
2. The Daily Usage Exemption allows fleets to request approval to replace an existing ICE vehicle with a new ICE powered vehicle when the needed vehicle configuration is available as a BEV, but the BEV's operating range or energy usage capacity does not

[184] If a vehicle has been in a one-time catastrophic event that makes both the engine and vehicle unrepairable, then the Non-Repairable Vehicle Exemption can be used.

meet the fleet's daily needs. This exemption requires a requesting fleet to report the daily mileage and energy used by each ICE vehicle of the same weight class and configuration as the vehicle sought to be replaced, and expressly now allows public agency utility fleets to include the three highest daily miles traveled or energy usage measurements recorded within a period of at least 30 consecutive workdays. The exemption is granted if there are no NZEV or FCEV available in the weight class or next highest weight class in the needed vehicle configuration, and if the highest of the daily mileages traveled or energy usage measurements reported is greater than the mileage range or energy usage measurements of an available BEV that has the highest rated energy capacity and that is in the same weight class and configuration as the ICE vehicle sought to be replaced.

Table 10 shows the initial population of ICE vehicles by weight class and configuration for the two vehicle configuration groups. The expected exemptions were calculated by multiplying the initial population by the weighted average of length of possession by vehicle category from LER data as shown in Table 9.

Table 10: Public Agency Utility ICE Vehicle Population by Weight Class and Grouping with Projected Turnover for Section 100 Baseline Year (2024)

Vehicle Group and Modeled Turnover	Class 2b-3	Class 4-5	Class 6-7	Class 8	*Total**	*Expected Exemptions*
Traditional Utility-Specialized: 10 years	945	1,656	919	2,065	*5,585*	*1,063*
All Others: 13 years	8,574	2,623	740	580	*12,517*	*12,517*
Totals*	9,519	4,280	1,660	2,644	18,101	13,580

*Totals may differ due to rounding.

Table 11 compares the cumulative number of traditional utility-specialized vehicles replaced by weight class from 2026 to 2029 for the Proposed SLG Amendments compared to Section 100 Baseline. In other words, these values represent the cumulative number of exemptions granted under the early access provisions of the Proposed SLG Amendments relative to the Section 100 Baseline.

Table 11: Proposed SLG Amendments Compared to Section 100 Baseline, Cumulative Traditional Utility Specialized Vehicle Replacements by Weight Class from 2026 to 2029

Weight Class	2026	2027	2028	2029
Class 3	5	10	19	22
Class 4-5	9	18	35	40
Class 6-7	5	10	19	22
Class 8	12	23	46	53
Totals	**31**	**61**	**119**	**137**

Table 12 compares the cumulative number of other (non-specialized) ICE vehicles replaced by ZEVs by weight class from 2026 to 2029 for the Proposed SLG Amendments when compared to Section 100 Baseline. Fleets must meet a 10% ZEV threshold before they qualify for the Daily Usage Exemption. Staff assumed this threshold would not be met until the 2028 model year when the 100% ZEV purchase requirement is implemented. The only change for this category of vehicles is the Section 100 Baseline which allows public utility fleets to utilize the highest mileage or energy usage criterion for *all vehicles in their fleet*, while the Proposed SLG

Amendments only allow public utility fleets to utilize the highest mileage or energy usage criterion for *traditional utility specialized vehicles*. Daily Usage Exemption applications are not initiated until 2028 which is why there are no ZEV purchases shown under the Proposed SLG Amendments relative to the Section 100 Baseline.

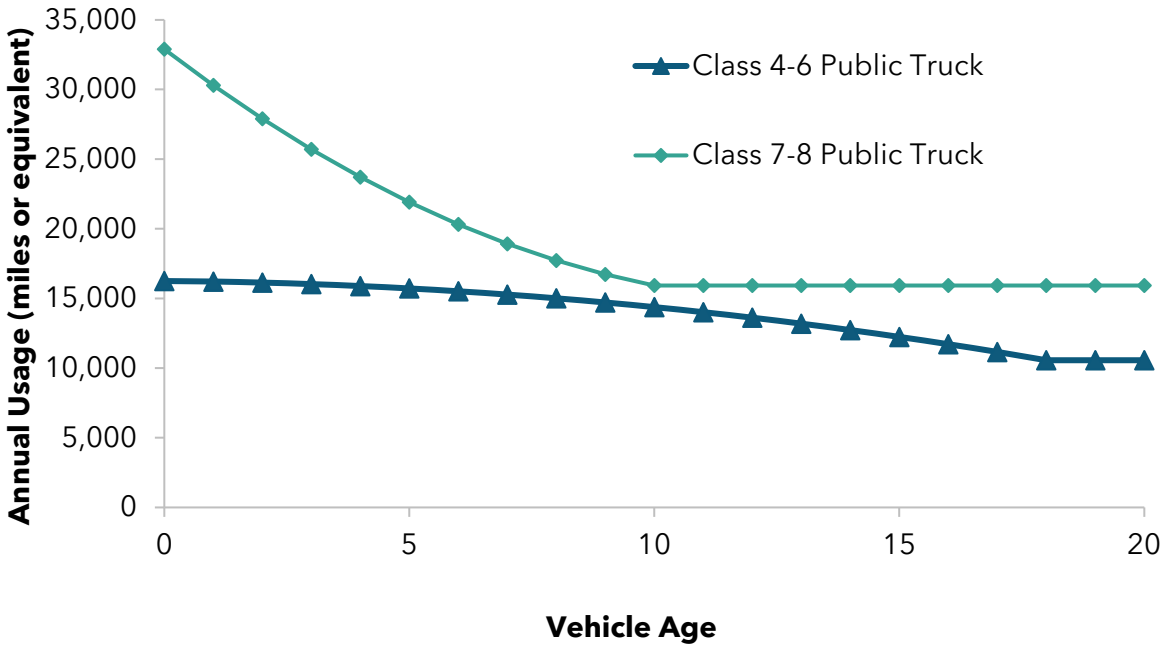
Table 12: Proposed SLG Amendments Compared to Section 100 Baseline, Cumulative New Other (Non-Specialized) Zero-Emission Vehicle Replacements by Weight Class from 2026 to 2029

Weight Class	2026	2027	2028	2029
Class 2b-3	0	0	98	186
Class 4-5	0	0	31	59
Class 6-7	0	0	9	17
Class 8	0	0	7	14
Totals	**0**	**0**	**145**	**276**

3. Annual Mileage/Activity

Annual mileage factors into several costs in this analysis including battery size, fuel costs, maintenance, and LCFS revenue. All annual mileage assumptions are based on EMFAC inventory estimates as representative of a typical vehicle within the category. For most vehicle categories, annual mileage is highest for newer vehicles and drops over time as the vehicle ages. EMFAC data was matched to the different representative vehicles. Staff assume ZEVs will travel the same distance as their combustion-powered counterparts when operated in a fleet. Figure 11 illustrates the mileage accrual rates for public fleets.

Figure 11: Sample Annual Mileage Accrual Rates by Vehicle and Age for Public Fleets



Based on data from CARB's Emission Factor (EMFAC) model, most of the public trucks travel an average of 38 miles per day. This average mileage can be met by most medium- and heavy-duty ZEVs available today. However, usage rates for vehicles can be highly variable so fleets typically purchase vehicles capable of far greater daily mileage capabilities than this fleetwide average.

4. Technology Mix Projections

Fleets currently purchase trucks powered by a variety of fuels – most commonly gasoline or diesel and sometimes compressed natural gas (CNG). Staff calculated the ratio of fuel types by ICE vehicle configuration for each of the GVWR weight class groupings based on TRUCRS data as shown on Table 13.[185]

Table 13: Public Agency Utility Fuel Type Population Ratios of Fleet by GVWR and Vehicle Classification

Configuration: Modeled Vehicle	Fuel	GVWR Class 2b-3	GVWR Class 4-5	GVWR Class 6-7	GVWR Class 8
Other	CNG	2%	0%	0%	1%
Other	Gas	60%	13%	1%	0%
Other	Diesel	6%	8%	4%	4%

[185] CARB, Truck Regulations Upload, Compliance, and Reporting System (TRUCRS), (web link: *https://ww2.arb.ca.gov/our-work/programs/truck-bus-regulation/trucrs-reporting-information*, downloaded on September 5, 2024).

Configuration: Modeled Vehicle	Fuel	GVWR Class 2b-3	GVWR Class 4-5	GVWR Class 6-7	GVWR Class 8
Traditional Utility-Specialized	CNG	1%	0%	1%	6%
Traditional Utility-Specialized	Gas	15%	18%	3%	0%
Traditional Utility-Specialized	Diesel	1%	11%	12%	31%

Under the Proposed Amendments, fleets are anticipated to meet their medium- and heavy-duty ZEV purchase requirements using a combination of BEVs and FCEVs. Additionally, the SLG fleet requirements can also be met with plug-in hybrids meeting the definition of NZEV prior to 2035. It is challenging to precisely predict which technologies fleets would use for complying with the ACF regulation given battery-electric, fuel cell electric, and plug-in hybrid technologies have different characteristics which will evolve over time. Generally, FCEVs are expected to have shorter refueling times less weight concerns in long-range applications when compared to a battery electric counterpart. BEVs can offer greater fuel cost-savings in a return to base duty cycle with sufficient dwell time to recharge the vehicles which is common for utility fleets.

Based on expected manufacturer product availability and vehicle suitability analyses, staff assume that fleets would comply with the regulation with a combination of battery-electric and fuel cell electric technologies. It is unclear whether NZEVs are expected to have a lower upfront cost per vehicle than full BEVs and they still require charging infrastructure. Also, they are less efficient than BEVs and still use drop in fuels and require oil changes, therefore NZEVs are not expected to have a significantly different total cost of ownership from BEVs. Additionally, NZEVs have a minimum all electric range requirement which, for most daily use cases, would have similar emissions characteristics as BEVs. As such, staff did not model NZEVs separate from BEVs. In addition, it is unclear when NZEVs will enter the market and what their specifications will be, i.e., the size of the powertrain and battery, vehicle applications, and pricing frameworks. In addition, NZEVs present a trade-off with more flexible operation but higher operational costs. As a result, NZEVs are not modeled separately in this analysis due to uncertainty and because they have similar emission characteristics as BEV. Currently, manufacturers are simultaneously making investments in FCEVs that are likely to lead to commercialization in the latter half of the decade. Currently, there are a number of medium- and heavy-duty FCEVs being demonstrated, but it remains somewhat uncertain when manufacturers will commercially release FCEVs and in which market segments they would be preferred over other technologies. For this analysis, staff assumed FCEV would be preferred in the ZEV market segment that commonly operates at weight limit. Using LER survey data, approximately 10% of a public agency utility fleet meets this criterion.[186] As a result, staff is assuming 100% will be BEV until 2027, then 90% BEV and 10% FCEV from then on.

Under the ZEV Purchase Exemption eligibility percentages for traditional utility-specialized vehicles are greater than for the other vehicle categories. Staff estimated the percentage of

[186] CARB, Large Entity Reporting Results, 2022 (web: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks/large-entity-reporting, last accessed January 2022).

traditional utility-specialized and other vehicles that could qualify for an exemption based on the draft streamlined list of available ZEVs and assessing which vehicles were or were not available as a ZEV in each configuration and weight class and then calculating a weighted average. This analysis was performed separately for traditional utility-specialized vehicles and all other vehicles. This availability assessment was performed based on the draft streamlined list of unavailable ZEVs as it existed on, August 2024. At this time, about 30% of the traditional utility-specialized vehicles and 10% of the other vehicles were listed as unavailable to purchase as ZEV. For years after 2026, staff modeled the vehicle availability as declining in a straight line to 0% in 2036 as shown Table 14.[187]

Table 14: Percent of Public Agency Utility Vehicles Eligible for the ZEV Purchase Exemption Eligibility Percentages

Year	Percentage of Traditional Utility-Specialized Vehicles Eligible for ZEV Purchase Exemption	Percentage of Other Vehicles Eligible for ZEV Purchase Exemption
2026	30%	10%
2027	27%	9%
2028	24%	8%
2029	21%	7%

As previously discussed, the enacted Section 100 changes allow a public agency utility to include the three highest mileage or energy usage readings recorded within a period of at least 30 consecutive workdays in the reports that they must submit to request a Daily Usage Exemption. Staff assumed including the three highest readings would double the number of eligible vehicles for the Daily Usage Exemption. The Section 100 changes do not include the proposed definition for “traditional utility-specialized vehicles” and as such all vehicles in the inventory currently fall into the eligibility percentages under the other category. The Proposed SLG Amendments limits the Daily Usage Exemption eligibility to only traditional utility-specialized vehicles.

A fleet owner is eligible for the Daily Usage Exemption if at least 10% of their California fleet are ZEVs or NZEVs, regardless of compliance method used. Staff modeled the number of eligible vehicles as 0 until 2028 to reflect fleets delay in obtaining the required 10% ZEV until the 100% ZEV purchase requirements. Starting 2028 staff estimated 15% of vehicles might request access to the Daily Usage Exemption based on the percentage of vehicles that travel over 100 miles per day using LER survey data extracted for public agency utilities.[188] After 2027, staff assumed that the percentage of vehicles eligible for the Daily Usage Exemption would decline in a straight line to 0% in 2035 for other vehicles and to 0% in 2036 for traditional specialized-utility vehicles as shown on Table 15. All the vehicles modeled in the Section 100 Baseline are eligible for the expanded Daily Usage Exemption.

[187] CARB, draft streamlined list of unavailable ZEVs, August 2024.

[188] CARB, Large Entity Reporting Results, 2022 (web: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks/large-entity-reporting, last accessed January 2022).

Table 15: Percent of Public Agency Utility Eligible for the Daily Usage Exemption

Year	Percentage Vehicles Eligible for standard Daily Usage Exemption	Percentage of Other Vehicles Eligible for Expanded Daily Usage Exemption
2026	0%	0%
2027	0%	0%
2028	15%	30%
2029	13%	27%

Table 16 displays the total exemption percentage modeled for traditional utility-specialized vehicles under the Section 100 Baseline and the Proposed SLG Amendments. Because the amendments do not modify the exemption eligibility for these vehicles, the percentage stays the same in both scenarios

Table 16: Combined Exemption Eligibility percentages for Traditional Utility-Specialized Vehicles

Year	Percentage of Vehicles Eligible for Exemptions
2026	30%
2027	27%
2028	54%
2029	48%

Table 17 shows the assumptions for exemptions available to the other vehicles in the Section 100 Baseline and under the Proposed SLG Amendments. The amendments restrict access to the expanded Daily Usage Exemption to only traditional utility-specialized vehicles which results in the percentage of other vehicles eligible for exemptions to decline.

Table 17: Combined Exemption Eligibility percentages for Other ICE Vehicles (Section 100 Baseline)

Year	Percentage of Vehicles Eligible for Exemptions in Section 100 Baseline	Percentage of Vehicles Eligible for Exemptions Under Proposed SLG Amendments
2026	30%	10%
2027	27%	10%
2028	54%	39%
2029	48%	34%

5. Upfront Costs

This section describes upfront costs for ICE vehicles and ZEVs. ZEVs are expected to have higher upfront costs due to increased vehicle prices and infrastructure, but these are expected to decline over time. Upfront costs include vehicle costs, infrastructure costs, taxes, and upgrades to maintenance bays.

a. New and Used Vehicle Prices

This section covers the cost to the fleet of purchasing a new vehicle. Today and for the foreseeable future, most BEVs and FCEVs are anticipated to cost more than their combustion powered counterparts. Declining battery and component costs, in addition to economies of scale, are expected to lower the incremental costs of ZEVs as the market expands. However, ZEV costs are expected to be higher than diesel vehicle costs until at least 2030 except for categories like vans that are expected to reach parity before 2030.[189]

Base gasoline- and diesel-fueled new vehicle prices are based on averages of new 2020 MY prices from manufacturers' websites and online truck marketplaces collected in early 2021.[190] The diesel vehicles used in cost modeling by weight class and configuration are provided below for comparison.

Table 18: Sample New Diesel Combustion-Powered Vehicle Prices

Configuration: Modeled Vehicle	GVWR Class 2b-3	GVWR Class 4-5	GVWR Class 6-7	GVWR Class 8
Other	Class 3 Service $58,207	Class 5 Service $67,562	Class 6 Box $88,350	Class 8 Box $124,729
Traditional utility-specialized	Class 2b Pickup $47,813	Class 5 Service $67,562	Class 6 Bucket $130,965	Class 8 Dump $181,896

The Federal Phase 2 GHG regulation (Title 40, Code of Federal Regulations Parts 85, 86, 600, 1033, 1036, 1037, 1039, 1065, 1066, and 1068), and California Phase 2 GHG regulations (CCR, Title 13, sections 1956.8, 1961.2, 1965, 2036, 2037, 2065, 2112, and 2141, and Title 17, sections 95300 to 95311, 95662 and 95663) require manufacturers to build trucks that meet specified GHG emissions standards. These requirements start in 2021 MY and ramp up through the 2027 MY. Table 19 shows U.S. EPA estimated per vehicle costs to comply with the federal Phase 2 GHG regulation.[191] These costs are added to the base cost of combustion-powered vehicles. ZEVs produce zero tailpipe emissions and do not incur increased costs due to the Phase 2 GHG regulation.

Table 19: U.S. EPA Phase 2 GHG Incremental Compliance Costs

Phase 2 Category	2024-2026 MY	2027+ MY
Class 2b-3 Pickup	$1,182	$1,674
Vocational Vehicles	$2,482	$3,297

The Heavy-Duty Omnibus regulation (Cal. Code Regs., tit. 13, §§ 1900, 1956.8, 1961.2, 1965, 1968.2, 1971.1, 1971.5, 2035, 2036, 2111 through 2133, 2137, 2139, 2140 through 2149, 2166 through 2170, 2423, and 2485; and Cal. Code Regs., tit. 17, §§ 95662 and 95663) is a

[189] CARB. Appendix G Total Cost of Ownership Discussion Document Advanced Clean Fleets Regulation (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appg.pdf*, last accessed May 23, 2025).
[190] CARB, New Vehicle Cost Analysis, September 9, 2021, (web link: *https://ww2.arb.ca.gov/sites/default/files/2021-08/210909costdoc_ADA.pdf*, last accessed January 2022).
[191] United States Environmental Protection Agency, *Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2*, October 25, 2016, (web link: https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf, last accessed January 2022).

multi-pronged, holistic approach to decrease emissions of new heavy-duty engines sold in California beginning in the 2024 model year (MY). The regulation establishes more stringent NOx and PM exhaust emission standards, a new lowload- test cycle to ensure emissions reductions are occurring in all modes of operation, and strengthens durability, warranty, useful life, and in-use testing provisions. Table 20 displays the costs to purchase typical combustion-powered vehicles subject to the Heavy-Duty Omnibus regulation rulemaking based on the MY. The Heavy-Duty Omnibus regulation applies to vehicles sold in California. Staff assumes State and local government fleets purchase all new vehicles within California rather than purchasing out of state.[192] These costs are added to the base cost of combustion-powered vehicles, but do not change the cost for ZEVs because they do not have combustion engines and have zero tailpipe emissions. The costs associated with the Heavy-Duty Omnibus regulation are included in the Section 100 Baseline. Although there is considerable uncertainty associated with recent Federal actions, it would be speculative to assume any specific changes in these costs during the analysis period because manufacturers have already made their investments to comply and federal standards are in place for the 2027 model year that encourages manufacturers to continue selling lower emitting engines.

Table 20: Heavy-Duty Omnibus Estimated Increase in Purchase Price Versus Previous Standard

Vehicle Configuration	Corresponding Weight Class	2024-2026 MY	2027-2030 MY	2031+ MY
Service	Class 5	$1,768	$4,966	$6,001
Box and Bucket	Class 6	$2,553	$6,355	$6,597
Box and Dump	Class 8	$4,051	$7,002	$6,296

Staff estimated the costs of medium- and heavy-duty ZEVs for battery-electric and fuel cell electric powered vehicles by adding electric components costs, fuel cell electric component costs, energy storage costs, and body costs to a conventional glider vehicle, similar to CARB's approach used in the ACT regulation. Component costs are adjusted to account for the indirect costs associated with production volume and early market complexity. The indirect cost multipliers are derived from the 2019 Argonne National Laboratory Report "Fuel Economy and Cost Estimates for Medium- and Heavy-Duty Vehicles" and are displayed in Table 21 and are applied to the individual component costs.[193] These multipliers are the highest in the earliest years when volumes are lowest and new engineering is needed to launch electrified products. Over time, these multipliers decline as economies of scale emerge and ZEV production becomes standardized within the industry. Values for years in between are interpolated.[194] The final retail price of ZEVs is the sum of these individual total component costs. The calculated

[192] CARB, *Public Hearing to Consider the Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments – Staff Report: Initial Statement of Reasons*2020 (web link: https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf, , last accessed January 2022).
[193] CARB, *Public Hearing to Consider the Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments – Staff Report: Initial Statement of Reasons*, 2020 (web link: https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf, last accessed January 2022).
[194] Argonne National Laboratory, R. Vijayagopal, D. Nieto Prada, and A. Rousseau, *Fuel Economy and Cost Estimates for Medium- and Heavy-Duty Vehicles*, 2019, (web link: https://publications.anl.gov/anlpubs/2021/02/165815.pdf, last accessed December 2021).

prices for BEVs are comparable to battery-electric trucks and vans that are available through the HVIP today.

Table 21: Indirect Cost Multipliers Applied to ZEV Component Costs

Vehicle Category	2020 and Earlier	2025	2030	2035 and Later
Electric machine	1.95	1.55	1.29	1.20
Battery Packs	2.18	1.76	1.48	1.20
Fuel Cell Electric System	2.18	1.76	1.48	1.20
Hydrogen Storage	2.18	1.76	1.48	1.20

Electric component costs including motors and electronic controllers are derived using assumptions from Argonne National Laboratory's 2021 Vehicle Technology Benefit Analysis for medium- and heavy-duty vehicles by averaging the low and high cases.[195] Hydrogen system component costs for the fuel cell electric stack and hydrogen storage are calculated using data from two Strategic Analysis reports prepared for the U.S. Department of Energy which estimated hydrogen fuel cell electric system costs for medium- and heavy-duty trucks.[196,197]

Generally, heavy-duty vehicles are manufactured in stages. A chassis manufacturer such as Ford or Freightliner installs a powertrain built by themselves or an outside supplier to produce a cab-and-chassis. This is then sent to a body manufacturer to install a body on the vehicle such as a box or aerial boom attachment bucket truck body. These body costs are modeled separately for ZEVs. The cost of a body can be estimated by measuring the difference between the price of a cab-and-chassis and the finished vehicle with a body. For this analysis, staff assumes bodies requiring PTO such as a bucket truck or refuse truck will cost 10% extra up until 2030 to account for additional costs of electrifying the PTO. No increased costs are modeled for bodies without PTO.

The cost of battery storage is the largest contributing factor associated with the price of BEVs. Battery pack costs have dropped nearly 90% since 2010, and are projected to continue declining.[198,199] Battery pack costs for medium- and heavy-duty applications are currently higher than for light-duty cars due to smaller volumes and differing packaging requirements even though many use the same cells. For this analysis, staff estimate battery costs using a recent 2021 analysis from the National Academies of Sciences, Engineering, and Medicine

---

[195] Argonne National Laboratory, *2021 Vehicle Technology Benefit Analysis – Medium- and Heavy-Duty Vehicles - Assumptions*, 2021 (web link: https://anl.app.box.com/s/ml0vlag8merv5xb2jjt5f901cl6rbu38, last accessed December 2021).

[196] Strategic Analysis, Brian D. James, *Fuel Cell Systems Analysis*, June 9, 2021, (web link: https://www.hydrogen.energy.gov/pdfs/review21/fc163_james_2021_o.pdf, last accessed December 2021).

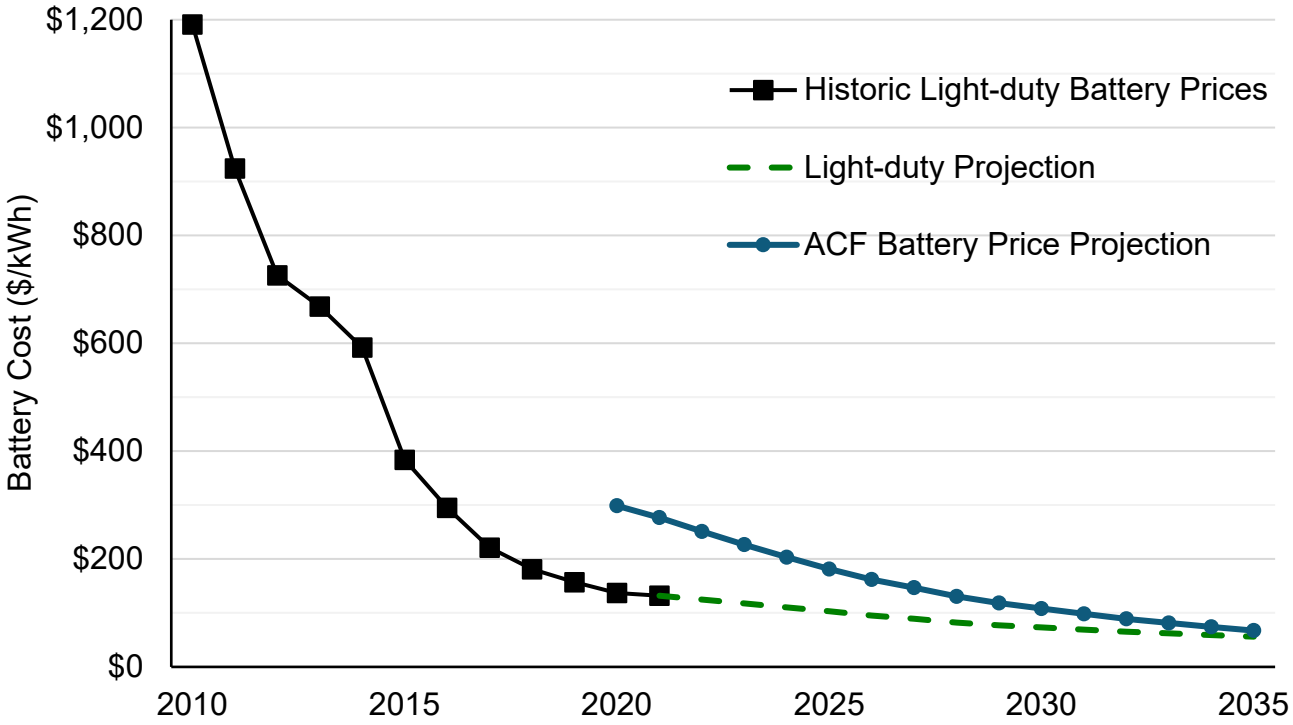
[197] Strategic Analysis, Cassidy Houchins, Brian D. James and Yaset Acevedo, *Hydrogen Storage Cost Analysis*, June 7, 2021, (web link: https://www.hydrogen.energy.gov/pdfs/review21/st100_james_2021_o.pdf, last accessed December 2021).

[198] Goldman Sachs, Electric vehicle battery prices are expected to fall almost 50% by 2026, October 7, 2024, (weblink: *https://www.goldmansachs.com/insights/articles/electric-vehicle-battery-prices-are-expected-to-fall-almost-50-percent-by-2025*, last accessed October 10, 2024).

[199] Bloomberg New Energy Finance, *Battery Pack Prices Fall to an Average of $132/kWh, But Rising Commodity Prices Start to Bite*, November 30, 2021, (web link: https://about.bnef.com/blog/battery-pack-prices-fall-to-an-average-of-132-kwh-but-rising-commodity-prices-start-to-bite/, last accessed July 2022).

and the indirect cost modifiers displayed in Table 21.[200] The historic battery price trend and the battery price projections used in this analysis is shown as Figure 12. The projections used in this analysis are shown in bold.

Figure 12: Historic Battery Price Trends and Battery Price Projections



The costs for BEVs are modelled using motors and electrical components in line with an existing diesel counterpart's power needs. Battery storage is estimated using the vehicle's average daily mileage based on EMFAC data and the energy efficiency of the electric vehicle in 2020. Staff then modeled vehicles which EMFAC models as driving below 100 miles per day, staff assumed the battery will have a 35% minimum capability of driving 100 miles daily. Staff then modeled a 35% buffer to account for battery degradation and some operational variability. For Class 2b pickups, staff modeled they will require an additional 50% larger battery than would otherwise be calculated to account for the towing needs of these vehicles as well as their operational variability. Similarly, staff modeled that the Class 8 specialty vehicle will require a 50% larger battery to accommodate expanded PTO operation as discussed previously. Table 22 lists the specifications of sample BEV.

Table 22: Battery Size Calculation

Representative Vehicle Configuration	Daily Mileage	2024 Efficiency (kWh/mi)	Battery Size (kWh)
Class 2b Pickup	100	1.89	120
Class 5 Service	100	1.13	135

[200] National Academies of Sciences, Engineering, and Medicine, *Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy 2025-2035*, 2021, (web link: https://www.nap.edu/read/26092/chapter/1, last accessed December 2021).

Representative Vehicle Configuration	Daily Mileage	2024 Efficiency (kWh/mi)	Battery Size (kWh)
Class 6 Box & Bucket	100	0.76	205
Class 8 Box & Dump	100	0.54	285

The costs for FCEVs are modeled using motors and electrical components in line with an existing diesel vehicle counterpart's power needs. The battery is assumed to be 10 kWh. The fuel cell electric stack power output is assumed to be one half the vehicle's peak power needs. The amount of hydrogen storage depends on vehicle size, with larger vehicles requiring more storage: 10 kg for Class 2b-3 vehicles, 20 kg for Class 4-7 vehicles, 40 kg for most Class 8 vehicles.

The estimated vehicle prices for sample vehicles of all fuel types are shown in Table 23. Based on these projections, upfront ZEV costs are expected to be higher than diesel vehicle costs until at least 2030. After that point, some vehicles may see lower upfront cost for ZEVs versus their dieselpowered- counterparts as costs for ZEVs continue declining while combustion-powered costs increase over time. Staff estimates that the average incremental capital cost to manufacture a new ZEV would be 30 to 60% higher than a comparable ICE vehicle, with these costs declining over time and in some cases would eventually reach parity with diesel-powered vehicles. The payback period for ZEVs versus their diesel counterpart varies among vehicles but ranges from five to ten years in the 2025 timeframe. This drops to two to five years in the 2030 and 2035 timeframe, indicating that ZEVs can recoup their incremental cost in a reasonable timeframe even without rebates and tax credits.[201]

Table 23: New Vehicle Price Forecast

Vehicle Group	2025 MY	2028 MY
Class 2b Pickup – Diesel	$47,813	$47,813
Class 2b Pickup – Gasoline	$37,419	$37,419
Class 2b Pickup – Battery-Electric	$72,536	$62,516
Class 2b Pickup – Fuel Cell Electric	$89,469	$96,385
Class 5 Service Truck – Diesel	$58,207	$58,207
Class 5 Service Truck – Battery-Electric	$78,934	$67,524
Class 5 Service Truck – Fuel Cell Electric	$142,518	$112,867
Class 6 Bucket Truck – Diesel	$130,965	$130,965
Class 6 Bucket Truck – Battery-Electric	$178,111	$158,165
Class 6 Bucket Truck – Fuel Cell Electric	$210,680	$178,582
Class 8 Dump Truck – Diesel	$181,896	$181,896
Class 8 Dump Truck – Battery-Electric	$238,395	$210,614
Class 8 Dump Truck – Fuel Cell Electric	$291,313	$244,995

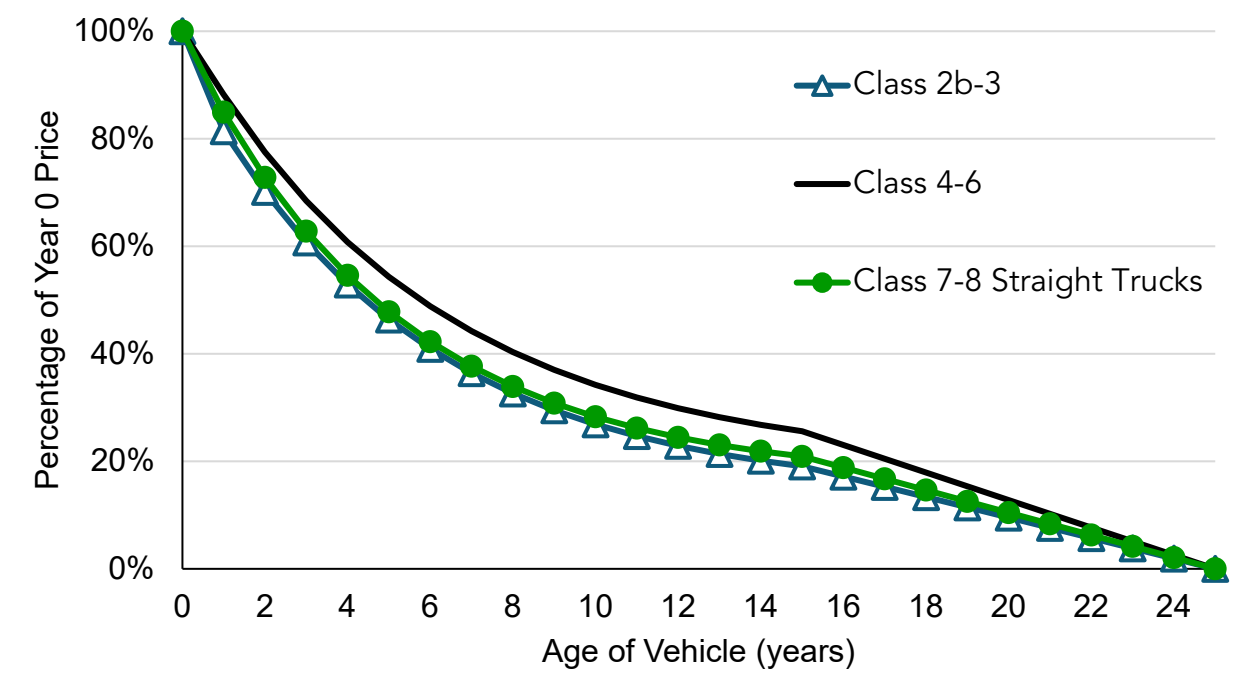
The used vehicle prices for combustion-powered trucks are calculated using major online truck marketplaces such as TruckPaper and Commercial Truck Trader by averaging the price of a given body type over several MYs and weight classes. This analysis provided up to 2,000 data points per MY to calculate the long-term residual values for medium- and heavy-duty

[201] CARB. Appendix G Total Cost of Ownership Discussion Document Advanced Clean Fleets Regulation (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appg.pdf*, last accessed May 23, 2025).

vehicles.[202] The trend is calculated by grouping similar trucks, performing a weighted average, then calculating an exponential curve fit for the different groups. The residual value is assumed to linearly decline from its value at 15-years-old to a value of 0 at 25-years-old to reflect that most vehicles are out-of-service or scrapped at that point. This analysis assumes state and local government fleets purchases vehicles outright.

Figure 13 displays the 3 residual value curves calculated for combustion-powered vehicles over a 25-year period. The residual value of ZEVs is assumed to decline at the same rate as combustion-powered trucks.

Figure 13: Residual Values by Vehicle Type and Age



b. Tariffs

An April 22 investigation launched by Commerce Secretary Lutnick is examining whether imports of vehicles over 10,000 pounds along with their components is a threat to U.S. national security.[203,204] Imported vehicles under 10,000 pounds and certain component parts are subject to a 25% tariff,[205] which is expected to increase the cost to purchase Class 2b - 3

[202] CARB, New Vehicle Cost Analysis, 2021.
[203] The Secretary cites authority under Section 232 of the Trade Expansion Act of 1962, which allows the President to impose tariffs or take other actions if they are determined to threaten national security.
[204] Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Trucks. April 25, 2025. (web link: *https://www.federalregister.gov/documents/2025/04/25/2025-07260/notice-of-request-for-public-comments-on-section-232-national-security-investigation-of-imports-of*, last accessed on May 27, 2025).
[205] White House. March 26, 2025. Fact Sheet: President Donald J. Trump Adjusts Imports of Automobiles and Automobile Parts into the United States (web link: *https://www.whitehouse.gov/fact-sheets/2025/03/fact-sheet-president-donald-j-trump-adjusts-imports-of-automobiles-and-automobile-parts-into-the-united-states/#:~:text=The%2025%25%20tariff%20will%20be,on%20additional%20parts%20if%20necessary*, last accessed May 27, 2025).

vehicles by 13.5% on average.[206] However, there is much uncertainty with the tariffs, they may be reversed before Trump leaves office or as soon as he leaves which may impact their intended effect to reduce imports and stimulate more U.S. production. Investors are frustrated with the on-again, off-again nature of the tariffs which has sparked concerns of an economic slowdown or even a recession, both of which would affect the price of new trucks.[207]

c. Fueling Infrastructure Installation and Maintenance

Fueling infrastructure is necessary to refuel or recharge vehicles. All vehicles need either dedicated refueling infrastructure onsite or publicly available retail stations to operate. There are numerous ways infrastructure expenses can be accounted for which would affect the cost to California businesses in different ways. Infrastructure expenses are generally an upfront capital investment needed prior to vehicles being deployed, but infrastructure can last multiple vehicle lifetimes and generally is amortized over its life.

For gasoline, diesel, and natural gas fueled vehicles, staff assumes the fleet is either using existing infrastructure or publicly accessible stations and the infrastructure cost is already incorporated into the fuel cost. As a result, these infrastructure costs are not separately modeled.

For this analysis, staff assumes BEVs would utilize depot charging. Fleets owning BEVs that do not use retail charging would set up private, behind-the-fence facility-side infrastructure to recharge their vehicles. There are two main cost components of installing charging infrastructure: the cost of the charger itself and the cost of upgrading the site to deliver power to the charger.

Charger costs are derived from the International Council on Clean Transportation working paper, “Estimating Electric Vehicle Charging Infrastructure Costs Across Major U.S. Metropolitan Areas.”[208] Generally, smaller trucks can use Level 2 chargers that are similar to the chargers currently used by light-duty vehicles. Class 6 and heavier vehicles are assumed to require higher power DC chargers. Class 8 vehicles are assumed to use a 150 kW charger with two ports for each pair of BEVs.

Infrastructure upgrade costs represent costs on the customer side of the meter associated with setting up charging infrastructure at a facility and may include trenching, cabling, conduit, and panels as well as associated infrastructure costs. Staff assumes that nearly all costs associated with utility-side upgrades are the responsibility of the utility as per requirements of Assembly Bill 841 (Ting, Stats. of 2020, ch. 372). Soft costs, including additional training costs and short-term implementation challenges, such as staff cycling vehicles between chargers, are captured within subsection “Transitional Costs and Workforce Development.” Infrastructure

---

[206] Yale.edu. The Fiscal, Economic, and Distributional Effects of 25% Auto Tariffs. March 28, 2025. (web link: *https://budgetlab.yale.edu/research/fiscal-economic-and-distributional-effects-25-auto-tariffs*, last accessed May 27, 2025).

[207] CNN. March 18, 2025. Trump’s tariff problem: He might need a third or fourth term for his plan to work (web link: *https://www.cnn.com/2025/03/18/business/trump-tariffs-trade-war-manufacturing-jobs/index.html*, last accessed May 27, 2025).

[208] International Council on Clean Transportation, *Estimating Electric Vehicle Charging Infrastructure Costs Across Major U.S. Metropolitan Areas*, August 2019 (web link: https://theicct.org/sites/default/files/publications/ICCT_EV_Charging_Cost_20190813.pdf, last accessed January 2022).

costs are derived from an analysis of BEV deployments conducted by CARB.[209] The data was analyzed to calculate the cost per port and results were broken into three groups: below 50 kW, between 50 and 250 kW, and above 250 kW. The results are shown in Figure 14 as a box-and-whisker plot. As depicted, infrastructure costs for fleets can be highly variable based on the layout of the site and the type of upgrades. The average cost is appropriate for a statewide analysis but the infrastructure cost to a given fleet may be higher or lower.

Figure 14: Infrastructure Upgrade Cost per Port and Power

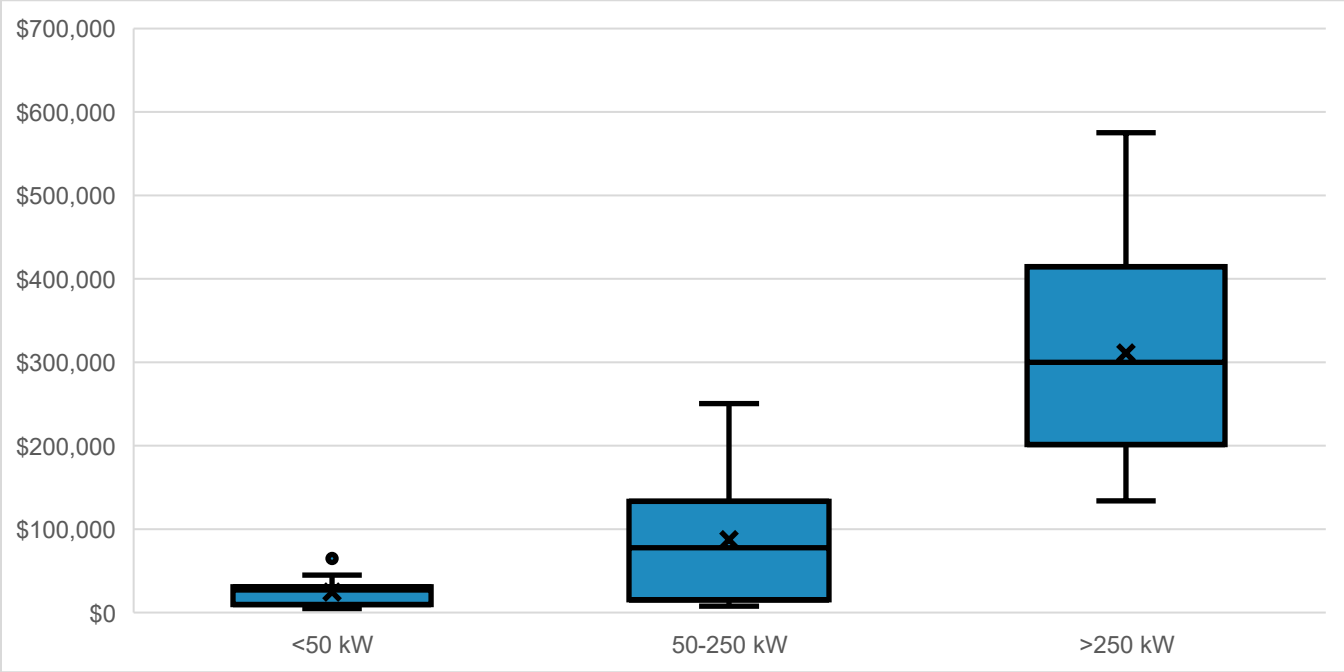


Table 24 outlines the assumptions for charger power, charger cost, and infrastructure upgrade costs.

Table 24: Charger Power Ratings and Infrastructure Costs Per Vehicle

Vehicle Group	Charger Power (kW)	Charger Cost ($/vehicle)	Infrastructure Upgrade Cost ($/vehicle)
Class 2b-3	19	$2,910	$25,985
Class 4-5	19	$2,800	$25,000
Class 6-7	50	$29,519	$45,734
Class 8	150 kW for 2 vehicles	$38,979	$45,734

Fleets are assumed to amortize their infrastructure costs over a 20-year period with an interest rate of 5%. The number of charger installations and infrastructure upgrades each year is based on the increase in ZEV population per year to avoid double-counting infrastructure costs in situations in later years where a ZEV is replacing another ZEV in the fleet. Fleets may be able to offset significant upgrade costs by participating in utility electrification incentives, however due to uncertain long-term availability and qualification criteria, we do not assume so in our

[209] CARB, Infrastructure Cost Analysis, 2021.

analysis. Hydrogen infrastructure costs are incorporated into the hydrogen fuel costs and are not separately modeled here.

Depot and retail chargers for ZEVs require regular maintenance. The maintenance costs of depot chargers are estimated by considering costs for replacing charger heads, connectors, and other components, as well as labor costs for regular inspections. Charger maintenance costs are estimated at $416/year/charger.[210] Staff assume that the maintenance costs for other fueling infrastructures are reflected in the fuel price.

Backup power generation is not included in this analysis. Although some fleets may want backup generation on site, staff does not assume infrastructure costs for the use of on-site backup generation for several number of reasons. First, ZEVs would gradually enter the fleet over time and only a small portion of the fleet would be ZE. Second, power outages affect all fuel types as fuel pumps cannot work without electricity, so similar issues already exist today. Third, mobile fueling, and other[211] solutions are currently being developed and present a solution for fleets seeking additional reliability during peak times using vehicle-to-grid technology.[212]

d. Sales Tax and Federal Excise Tax

Taxes are additional costs levied on the purchase of a vehicle. Because they are based on the purchase price of the vehicle, they are higher for ZEVs due to their higher upfront costs.

Vehicles purchased in California must pay a sales tax on top of the vehicle's purchase price. The sales tax varies across the state from a minimum of 7.25% up to 10.75% in some municipalities; a value of 8.6% was used for staff's analysis based on a statewide average weighted by economic output.[213] This results in higher costs for fleets and higher revenue for State and local governments. Class 8 vehicles are subject to an additional federal excise tax which adds 12% to their purchase price.

(1) Maintenance Bay Upgrades

Maintenance bays are facilities used to service vehicles. Services performed include inspections, routine maintenance, preventative maintenance, repairs, overhauls and more. Servicing electric vehicles requires separate safety equipment, diagnostic tools, and equipment which would incur costs to the facility.

---

[210] U.S. Department of Energy – Energy Efficiency and Renewable Energy. Alternative Fuels Data Center, *Charging Infrastructure Operation and Maintenance*, 2021 (web link: https://afdc.energy.gov/fuels/electricity_infrastructure_maintenance_and_operation.html, last accessed January 2022).

[211] GM, *GM Plans to Broaden Electrification, Expanding Fuel Cells Beyond Vehicles*, January 19, 2022, (web link: https://media.gm.com/media/us/en/gm/home.detail.html/content/Pages/news/us/en/2022/jan/0119-hydrotec.html, last accessed January 2022).

[212] Environmental Defense Fund, Gladstein, Neandros & Associates, March 2021 (web link: http://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf, last accessed January 2022).*California Heavy-Duty Fleet Electrification Summary Report* , March 2021 (web link: http://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf, last accessed January 2022).

[213] Based on the tax rate data from California Department of Tax and Fee Administration (CDTFA), Sales and Use Tax Rates, October 1, 2024, (Web link: *https://cdtfa.ca.gov/taxes-and-fees/sales-use-tax-rates.htm*, last accessed December 17, 2024).

Based on transit agency data, upgrading a 15-bus maintenance bay to handle battery-electric buses would cost $25,000, and upgrading to handle fuel cell electric buses would cost $750,000.[214] For this analysis, staff assumes the cost per maintenance bay is the same and a 15-bus maintenance bay could accommodate 25 trucks. After adjusting for inflation, this works out to be $1,116 per BEV and $33,480 per FCEV. The amount of maintenance bay upgrades each year is based on the increase in ZEV population per year to avoid double-counting in situations where a ZEV is replaced by a ZEV.

e. Operating and Maintenance Costs

(1) Gasoline, Diesel, Natural Gas, Electricity, and Hydrogen Fuel Costs

This section describes operating costs for ICE vehicles and ZEVs. ZEVs are expected to have lower operating costs due to fuel savings, reduced maintenance cost expenses, and LCFS revenue. Operating costs include fuel costs, diesel exhaust fluid consumption, LCFS revenue, maintenance costs, midlife costs, and registration fees.

Fuel costs are calculated using total fuel consumed per year, and the cost of fuel per unit. The total fuel consumed per year is based on the vehicle population per calendar year, the annual mileage traveled by those vehicles, and the fuel economy/fuel efficiency of the vehicles. Population and mileage assumptions are discussed in the "Vehicle Population" and "Annual Mileage/Activity" subsections, respectively. In general, ZEVs are two to five times as efficient as similar vehicles with ICE significantly reduce petroleum and other fossil fuel consumption.[215]

Fuel economy is measured in miles per gallon for gasoline and diesel fueled vehicles, and miles per diesel gallon equivalent for natural gas fueled vehicles. Gasoline, diesel, and natural gas fuel economy is derived from EMFAC inventory projections for each group. Generally, combustion-powered fuel economy is expected to increase until the 2027 MY and remain relatively constant afterwards. The energy efficiency of BEVs and FCEVs is measured in miles per kWh and miles per kg, respectively.[216]

BEV energy efficiency is derived from in-use data collected from a variety of vehicles.[217,218,219] For fuel cell electric vehicle efficiency, staff applied the LCFS program's energy efficiency ratio (EER) of 1.9 to the diesel fuel economy to estimate the fuel cell electric fuel economy as there

---

[214] Transit Agency Subcommittee, Lifecycle Cost Modelling Subgroup, Report of Findings, 2017.
[215] CARB, *Appendix G: Battery Electric Truck and Bus Efficiency Compared to Conventional Diesel Vehicles*, 2019, (web link: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/appg.pdf, last accessed July 2022).
[216] Fuel economy, as defined in the Energy Policy and Conservation Act of 1975, does not apply to BEVs. *See* 49 U.S.C. §§ 32901(10 & 11) (defining "fuel" as gasoline, diesel oil, or other "liquid or gaseous fuel" that needs conserving and defining "fuel economy" as the average number of miles traveled by an automobile per gallon of gasoline or its equivalent). Moreover, note that medium- and heavy-duty on-highway vehicles are not ''automobiles'' as defined in 49 U.S.C. § 32901(a)(3) (4-wheeled vehicles rated under 10,000 lb. GVWR, excluding work trucks (vehicles rated between 8,500 to 10,000 lb. GVWR and not medium-duty passenger vehicles as defined in 40 C.F.R. § 86.1803-01).
[217] CARB, *Battery Electric Truck and Bus Efficiency Compared to Diesel Vehicles*, May 2018, (web link: https://ww2.arb.ca.gov/sites/default/files/2018-11/180124hdbevefficiency.pdf, last accessed January 2022).
[218] Penn State, LTI Bus Research and Testing Center, *Motor Coach Industries D45 CRTeLE*, December 2020, (web link: *http://apps.altoonabustest.psu.edu/buses/reports/522.pdf?1608733416*, last accessed January 2022).
[219] Penn State, LTI Bus Research and Testing Center, *GreenPower Motor Company EV Star*, April 2020, (web link: http://apps.altoonabustest.psu.edu/buses/reports/515.pdf?1603821665, last accessed January 2022).

is limited information which measures the energy efficiency of medium- and heavy-duty FCEVs.

Staff modeled that for both BEVs and FCEVs, the efficiency will improve at the same rate the Phase 2 GHG regulation would require for combustion-powered vehicles until 2027 MY, then remain constant afterwards. This may be a conservative estimate as both technologies are less developed than ICE powertrains and reports have shown recent improvements in the technology.

outlines the fuel economy and energy efficiency assumptions for a sample of vehicle groups and technology types over the course of the regulation. Full assumptions are in the Vehicle Attribute Appendix.

Table 25: Sample Vehicle Fuel Economy and Energy Efficiency

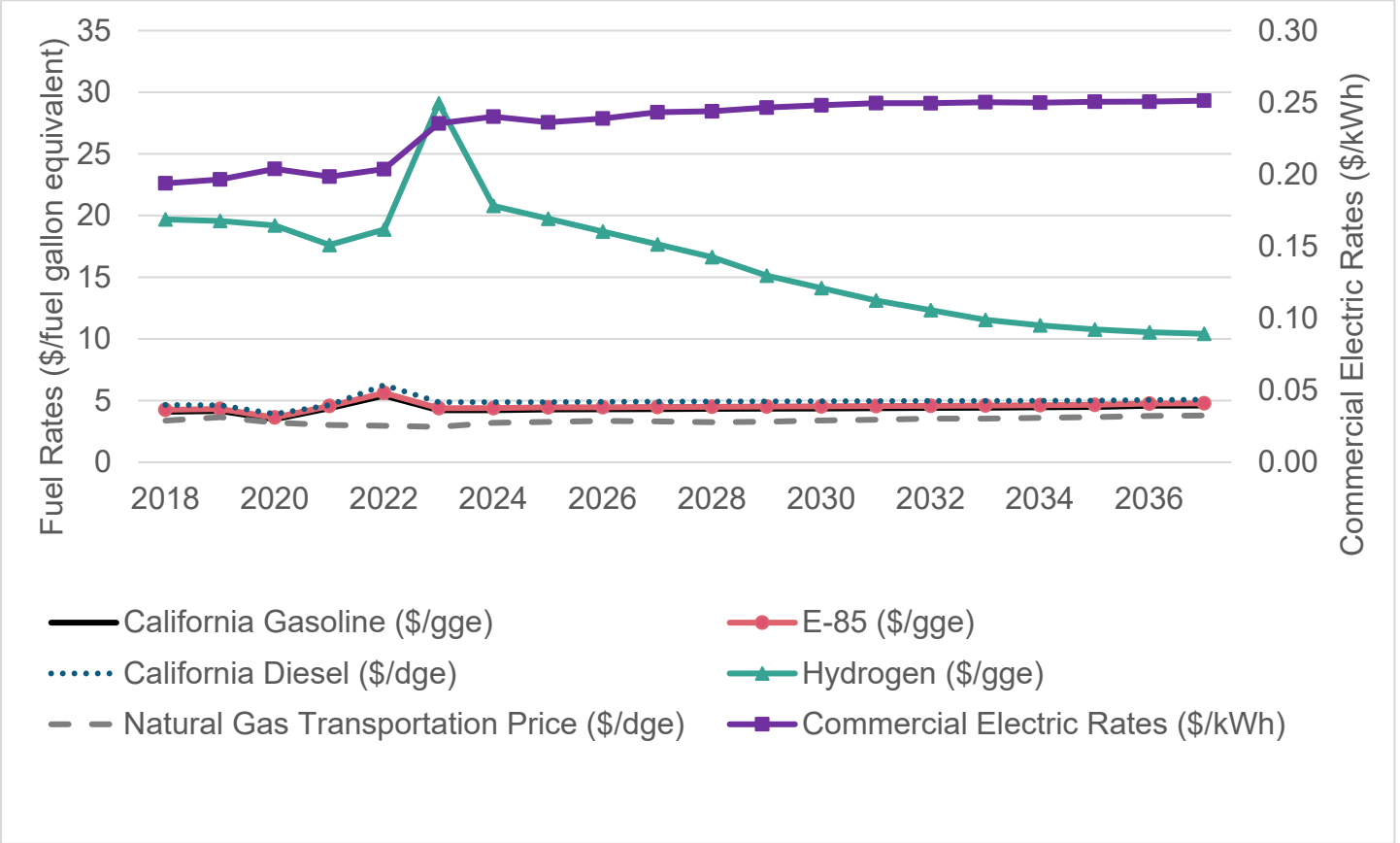
Vehicle Group	2024 MY	2028 MY	Unit
Class 2b Pickup – Diesel	19.4	19.4	mpg
Class 2b Pickup – Gasoline	14.1	14.1	mpg
Class 2b Pickup – Battery-Electric	1.9	2.0	mi./kWh
Class 2b Pickup – Fuel Cell Electric	42.5	42.4	mi./kg
Class 5 Service Truck – Diesel	8.8	8.9	mpg
Class 5 Service Truck – Battery-Electric	1.1	1.2	mi./kWh
Class 5 Service Truck – Fuel Cell Electric	15.0	17.0	mi./kg
Class 6 Bucket Truck – Diesel	8.9	9.0	mpg
Class 6 Bucket Truck – Battery-Electric	0.8	0.8	mi./kWh
Class 6 Bucket Truck – Fuel Cell Electric	15.0	15.9	mi./kg
Class 8 Dump Truck – Diesel	6.6	6.6	mpg
Class 8 Dump Truck – Battery-Electric	0.54	0.57	mi./kWh
Class 8 Dump Truck – Fuel Cell Electric	10.7	11.4	mi./kg

Energy prices to 2029 are taken from the CEC “Transportation Energy Demand Forecast.”[220] CEC’s rate forecast includes current and escalating revenue requirements to support ongoing investments in transmission and distribution infrastructure.

For this analysis, hydrogen stations are assumed to be available at strategic locations around seaports or major distribution hubs where the infrastructure costs are included in the hydrogen fuel price rather than reflecting costs for stations installed in a depot. This model is currently used for light-duty hydrogen stations and medium- and heavy-duty diesel sales and appears most appropriate for medium- and heavy-duty hydrogen fueling.

[220] California Energy Commission, Transportation Energy Demand Forecast Results, November 28, 2023.

Figure 15: CEC Fuel Price Forecasts through 2035



The cost of fuel displayed in Figure 15 includes fuel taxes. State and local taxes on fuel are listed below in Table 26.

Table 26: Local and State Taxes on Fuel

Fuel Type	Local Tax	State Tax
Gasoline	3.7% sales tax	$0.60/gal excise tax*
Diesel	4.86% sales tax	9.69% sales tax + $0.45/gal excise tax
Natural Gas	0	$0.887/gasoline gallon equivalent use tax
Electricity	3.53% utility user tax**	$0.0003/kWh
Hydrogen	0	0

*Local government portion is $0.26/gal and State government portion is $0.34/gallon.
**Statewide population-weighted average.

(2) Diesel Exhaust Fluid Consumption

Diesel-powered vehicles equipped with modern emissions control devices require diesel exhaust fluid (DEF) to reduce NOx in the exhaust stream. Argonne National Laboratory estimates DEF consumption as being 2% of total fuel usage in their online 2020 Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool.[221] This

[221] Argonne National Laboratory, *Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool*, 2023, (Web link: *https://greet.es.anl.gov/afleet*, last accessed 2023).

assumption will be applied to the fuel economy discussed previously to estimate the DEF consumption per mile. DEF is assumed to cost $3.12 per gallon per Argonne.

(3) LCFS Revenue

The LCFS is a California regulation that creates a market mechanism incentivizing low carbon fuels and was amended in 2018 and 2019 to (1) increase the EER for Class 4-8 trucks from 2.7 to 5.0, (2) reduce the carbon intensity target to 20% reduction by 2030, and (3) clarify how hydrogen station operators can receive credits. The regulation now requires the carbon intensity of California's transportation fuels to decrease by 20% through the 2030 timeframe and maintains the standard afterwards. Electricity and hydrogen are eligible to earn LCFS credits which can be sold and used to offset the costs of these fuels. Fossil gasoline and diesel are generally not eligible for LCFS credits.

Fleets who own and operate their infrastructure generate credits based on the amount of fuel or energy they dispense. Credit values for different fuel types are calculated using the LCFS Credit Price Calculator.[222] For this analysis, staff used the 2023 monthly average credit price from transactions that occurred in CY 2023, which is $75.[223] And the California-average carbon intensity of 80 gCO2e/MJ for grid electricity.[224] Lower carbon sources of electricity would increase the credit value.

(4) Maintenance Costs

Maintenance costs reflect the cost of labor and parts for routine maintenance, preventative maintenance, and repairing broken components, and does not include costs reflected in the next section "Midlife Costs" where engine rebuilds, battery replacements, or fuel cell electric stack refurbishments are described. Maintenance costs for electric vehicles are generally assumed to be lower than for diesel in part due to their simpler design and fewer moving components.

Maintenance costs for combustion-powered vehicles are based on numerous studies published assessing maintenance costs for vehicles over a representative timeframe. The maintenance cost for the selected representative vehicles was calculated by identifying all sources where the maintenance cost appeared for the representative vehicles and averaging the values. All maintenance cost sources are listed in the Vehicle Attribute Appendix.

BEVs and FCEVs are assumed to have 40% lower vehicle maintenance costs compared to gasoline and diesel based on an aggregation of sources and data.[225] While numerous reports

---

[222] CARB, *LCFS Credit Price Calculator*, 2021, (web link: https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/dashboard/creditvaluecalculator.xlsx, last accessed January 2022).
[223] CARB, Monthly LCFS Credit Transfer Activity Reports, 2023, (web link: *https://ww2.arb.ca.gov/resources/documents/monthly-lcfs-credit-transfer-activity-reports* , last accessed October 15, 2024).
[224] CARB, LCFS Pathway Certified Carbon Intensities, 2024, (weblink: *https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities*, last accessed June 7, 2025).
[225] Argonne National Laboratory, *Comprehensive Total Cost of Ownership Quantification for Vehicles with Different Size Classes and Powertrains*, July 2021, (web link: https://www.arb.ca.gov/regact/2018/ict2018/appg.pdfhttps://www.arb.ca.gov/msprog/bus/maintenance_cost.pdf, last accessed January 2022).

assume ZEVs can achieve maintenance costs of 50% or greater compared to gasoline or diesel, the lack of long-term data on maintenance costs presents uncertainty for modelling purposes; therefore, the staff analysis uses the more conservative estimate. Table 27 illustrates the maintenance costs for the vehicles as utilized in this analysis.

Table 27: Sample Vehicle Maintenance Costs per Mile

Vehicle Group	Maintenance Cost ($/mi.)
Class 2b Pickup – Diesel	$0.26
Class 2b Pickup – Gasoline	$0.26
Class 2b Pickup – Battery-Electric	$0.15
Class 2b Pickup – Fuel Cell Electric	$0.15
Class 5 Service Truck – Diesel	$0.33
Class 5 Service Truck – Battery-Electric	$0.20
Class 5 Service Truck – Fuel Cell Electric	$0.20
Class 6 Bucket Truck – Diesel	$0.21
Class 6 Bucket Truck – Battery-Electric	$0.12
Class 6 Bucket Truck – Fuel Cell Electric	$0.12
Class 8 Dump Truck – Diesel	$0.21
Class 8 Dump Truck – Battery-Electric	$0.12
Class 8 Dump Truck – Fuel Cell Electric	$0.12

(5) Registration Fees

Vehicles operating and registered by commercial businesses in California must pay an annual registration fee. State and local governments are exempt from paying registration fees to the Department of Motor Vehicles. For the purposes of this analysis, no registration fees were considered.

f. Other Costs

This section describes costs that do not fit under upfront costs or operating costs. These include residual values, depreciation, insurance, transitional costs and workforce development, reporting costs, and battery recycling.

g. Residual Values

The residual value represents the value of the vehicle at the point where the initial purchaser sells the vehicle to another party. This value depends on numerous factors including the type of vehicle, its age, and the vehicle's propulsion technology and becomes more significant when modeling vehicle replacement cycles that are less than 12 years. The residual value for a vehicle is calculated using the same methodology described for used vehicles in the subsection titled "New and Used Vehicle Prices." For combustion-powered vehicles, this is the price of the used vehicle when it is sold out of state. This analysis reflects the net change to the initial purchaser of the vehicle. The residual value represents the increase in sales to private fleets in California.

h. Insurance

Fleets purchase insurance policies to protect against financial loss and a variety of unexpected events, including damaging other property, damage to the vehicle, medical coverage in the

event of an accident, and other situations. Because ZEVs are anticipated to cost more than their combustion-powered counterparts, vehicle coverage is anticipated to be more costly as well.

Table 28 shows the estimated cost of various insurance coverage components based on several sources.[226,227,228]

Table 28: Estimated Annual Semi-Truck Insurance Policy Costs

Types of Insurance Coverage	Policy Cost
Primary Liability	$6,000
General Liability	$550
Umbrella Policy	$600
Physical Damage	$2,000
Bobtail Insurance	$375
Uninsured/Underinsured Motorist	$75
Occupational Accident	$1,900

Physical damage is the only coverage element that depends on the cost of the vehicle being operated. The other coverage types are not dependent on the cost of the vehicle. For example, if truck were to crash into a signpost, the cost of the truck would not affect the cost of paying to replace the signpost.

Staff assumes the insurance costs decline proportional to the value of the vehicle at the same rate as shown in subsection “New and Used Vehicle Prices.”

i. Transitional Costs and Workforce Development

Transitioning to a new technology has inherent costs associated with its deployment, including shifts in operational and maintenance practices. These recurring costs include operator and technician training, purchasing and upgrading of software, securing additional spare parts, and others.

Limited information is available for this type of transitional cost, but discussions regarding this topic occurred during the development of the Innovative Clean Transit regulation. Based on discussions with transit agencies, staff assumes that these “other costs” associated with zero-emission bus (ZEB) deployments are equivalent to 2.5% of bus prices for all powertrains and should go down over time for ZEBs as they become more common.[229]

In the cost analysis for the Proposed SLG Amendments, staff make similar assumptions that the workforce training and transitional costs are equal to 2.5% of the incremental cost difference between a Section 100 Baseline combustion vehicle and a ZEV, given that the transitions that transit agencies will be making are similar to changes made by public agency

---

[226] Forerunner Insurance Group, *What does Average semi truck insurance costs for owner operators?*, 2018, (web link: https://www.forerunnerinsurance.com/what-does-average-semi-truck-insurance-costs-for-owner-operators/, last accessed January 2022).
[227] Commercial Truck Insurance HQ, *Average Semi Truck Insurance Cost*, 2019, (web link: https://www.commercialtruckinsurancehq.com/average-semi-truck-insurance-cost, last accessed January 2022).
[228] Strong Tie Insurance, *Why You Need a Commercial Semi Truck Insurance Coverage*, 2021, (web link: https://www.strongtieinsurance.com/semi-truck-insurance/, last accessed January 2022).
[229] Transit Agency Subcommittee-Lifecycle Cost Modeling Subgroup, Report of Findings, 2017.

utility fleets. These costs continue until 2030 at which point ZE technology will have developed to a point where these transitional costs become business-as-usual for trucking fleets.

j. Reporting Costs

SLG fleets subject to the Proposed SLG Amendments would already be reporting information annually to demonstrate compliance. Reporting would already include basic information, including fleet contact information, vehicle registration information, and engine family numbers for tractors approaching the end of their useful life. They would also be applying for exemptions and extensions. Staff estimated the average time to apply for an exemption is 4 hours per application. The hourly staffing cost is assumed to be $38.17 per hour,[230] adjusted for 31.3% benefits compensation, which means the total cost would be $55.56 per hour.[231] Staff calculated the annual reporting costs as the difference between any new ICE vehicle purchased under the AB 1594 early access provisions and those that would otherwise be part of Section 100 Baseline.

k. Battery Recycling, Repurposing, and Disposal

The energy capacity of the batteries used in ZEVs will naturally degrade over their useful lives and require battery replacements. When battery capacity is not sufficient for meeting daily range needs for a truck or bus, it is expected that there will be a second life for the batteries. Used batteries can be repurposed into other applications such as stationary storage, then at the end of those battery lives can be recycled and non-recyclable materials can be disposed.

The cost for battery recycling at the end of battery life is not included here, because this cost could be offset by the residual value of the battery. The end of life may be a revenue source depending on whether the battery can be recycled and repurposed or could become a cost if it must be disposed of. Light-duty vehicle batteries are already being repurposed for second life applications including stationary storage.[232,233] Even today, some lithium-ion battery manufacturers give residual value to customers upon the retirement of a battery. This analysis assumes the residual value will offset the recycling cost with a net zero cost.

l. Total Costs

The Proposed SLG Amendments to the ACF regulation would give traditional utility-specialized vehicles early access to exemptions and limit a public agency utility fleet's broader access to the Daily Use Exemption to only their traditional utility-specialized vehicles when compared to the Section 100 Baseline scenario. Table 30 summarizes the incremental difference in upfront and operational costs between the Proposed SLG Amendments and the Section 100 Baseline scenario. In Figure 16 the cost components are grouped as shown in Table 29. The cost-savings to public agency utility fleets shown in Table 30 are reflected as costs to private fleets

---

[230] U.S. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Logisticians,(web link: https://www.bls.gov/ooh/business-and-financial/logisticians.htm (visited September 25, 2024).
[231] U.S. Bureau of Labor Statistics, Table 2. Civilian workers by occupational and industry group, September 2024, (web link: https://www.bls.gov/news.release/ecec.t02.htm, last accessed January 17, 2025).
[232] Nissan Motor Corporation, *Nissan LEAF batteries to light up Japanese town*, 2018 (web link: https://newsroom.nissan-global.com/releases/180322-01-e?lang=en-US&la=1&downloadUrl=%2Freleases%2F180322-01-e%2Fdownload, last accessed January 2022).
[233] BMW Group, BMW Group, *Northvolt and Umicore join forces to develop sustainable life cycle loop for batteries* (web link: https://www.press.bmwgroup.com/global/article/detail/T0285924EN/bmw-group-northvolt-and-umicore-join-forces-to-develop-sustainable-life-cycle-loop-for-batteries, last accessed January 2022).

because certain private fleets could potentially purchase fewer ZEVs due to manufacturers' ACT compliance. The total statewide direct costs that businesses may incur over the lifetime of the Proposed SLG Amendments is equivalent to the cost-savings for public agency utility fleets of $14 million.

Table 29: Summarized Cost Items

Cost Category	Components
Vehicle Cost	Vehicle Cost, Sales Tax, Federal Excise Tax, and Residual Values
Fuel Cost	Gasoline, Diesel, Electricity, Hydrogen Fuel Cost, Fuel Taxes, Diesel Exhaust Fluid (DEF) consumption, LCFS Revenue
Infrastructure	Charger Costs, Infrastructure Upgrades, Charger Maintenance, Maintenance Bay Upgrades
Maintenance	Vehicle Maintenance Costs, Heavy-Duty Inspection & Maintenance (HDI&M)
Other	Insurance, Transitional Costs, Reporting Costs

Figure 16: Total Estimated Statewide Incremental Cost of the Proposed SLG Amendments Relative to the Section 100 Baseline Scenario (Million 2023$)

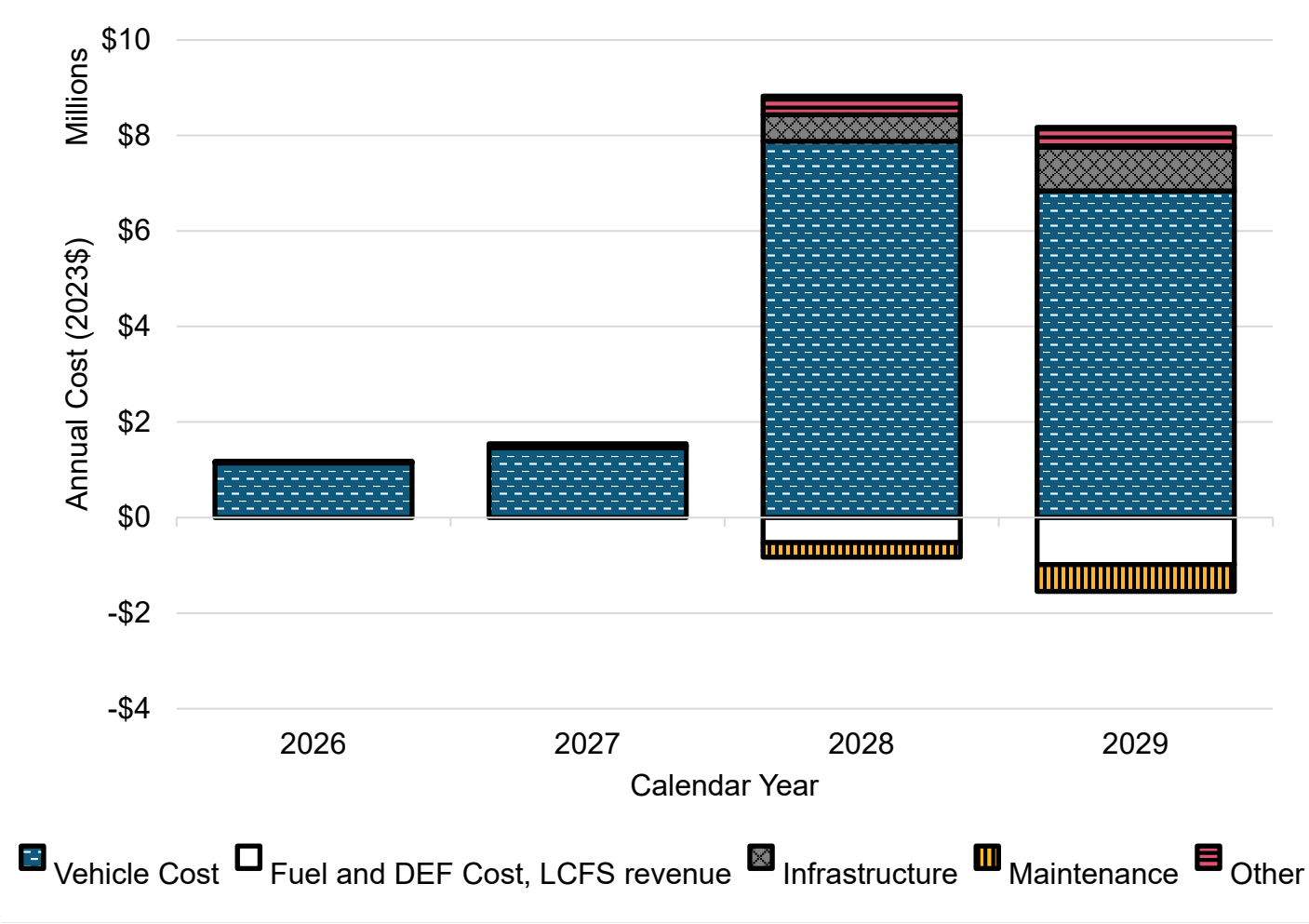


Table 30: Incremental Total Cost of the Proposed SLG Amendments to the ACF Regulation Relative to Section 100 Baseline (thousand 2023$)

Year	2026	2027	2028	2029	TOTAL
Vehicle Price	$3,832	$3,523	$10,925	$7,157	$25,438
Sales and Excise Tax	$601	$552	$1,487	$941	$3,580
EVSE & Infrastructure Installation and Maintenance	$0	$0	$412	$782	$1,194
Maintenance Bay Upgrades	$0	$0	$145	$131	$276
Fuel Cost	$14	$35	-$316	-$609	-$877
DEF Consumption	$0	$0	-$6	-$11	-$16
LCFS Revenue	$0	$0	-$202	-$364	-$567
Maintenance Cost	$7	$17	-$298	-$546	-$820
HDI&M	$0	$0	-$8	-$15	-$23
Transitional Costs and Workplace Development	$0	$0	$254	$218	$472
Residual Values	-$3,291	-$2,616	-$4,534	-$1,260	-$11,701
Insurance Costs	$8	$20	$109	$168	$304
Reporting Costs	$7	$13	$26	$30	$77
Total Costs	**$4,470**	**$4,161**	**$13,357**	**$9,428**	**$31,341**
Total Savings	**-$3,291**	**-$2,616**	**-$5,364**	**-$2,806**	**-$14,002**
Net	**$1,179**	**$1,545**	**$7,993**	**$6,622**	**$17,339**

*Note: Totals may differ due to rounding.

The costs summarized in Table 30 are based on the Proposed SLG Amendments when compared to Section 100 Baseline. Public agency utilities utilizing the default ZEV Purchase Schedule can elect to replace their vehicles whenever they want, deferred vehicle purchases beyond the 10 years modeled for traditional utility-specialized vehicles and 13 years modeled for other vehicles will be less costly than the Proposed SLG Amendments. Note that most increased costs associated with the proposed amendments are tied to allowing faster vehicle turnover which is a discretionary choice by public agency utilities. Fleets that choose to turn over their vehicles earlier face higher vehicle costs but are expected to see cost savings benefits from reduced maintenance costs and would likely benefit from improved reliability for crews in the field due to earlier access to newer technology options in their fleet. Fleets maintain the option to hold onto their vehicles beyond 13 years which will not cause any cost increases.

B. Fiscal Impact Statement

The Proposed SLG Amendments do not impact State and local government expenditures other than direct costs and cost-savings for public agency utilities which are summarized in and provided in more detail in Table 31. Indirect impacts, including revenues generated from a variety of State and local taxes and vehicle registration fees are offset by private fleets.

1. Fiscal Impact on Government

All local government fleets are subject to the SLG elements of the ACF regulation, with reporting requirements that began in 2024. The local government fleet is estimated to make up roughly 100% of California's public agency utility fleet, and all the total costs outlined in Table

30 would be assumed to pass-through to local governments. Small local governmental fleets and those located in designated counties would face their first ZEV purchase requirements in 2027, with all others in 2024. The Proposed SLG Amendments would go into effect starting in October 2026.

a. Fiscal Impacts on Local Government

The Proposed SLG Amendments are estimated to cost local governments $31 million and save them $14 million over the regulatory analysis period to 2029, as shown in Table 31. These costs are not reimbursable pursuant to Section 6 of Article XIII B of the California Constitution and Part 7 (commencing with Section 17500) of Division 4 of the Government Code. These costs are not reimbursable because this action neither compels local agencies to provide new governmental functions or to increase the actual level or quality of services that they already provide the public.[234] For the foregoing reasons, any costs incurred by local agencies to comply with this regulatory action are not reimbursable.[235]

Table 31: Estimated Fiscal Impacts to Local Government (thousand 2023$)

Year	Local Government Fleet (Costs)	Local Government Fleet (Cost-Savings)
2026	$4,470	$3,291
2027	$4,161	$2,616
2028	$13,357	$5,364
2029	$9,428	$2,806
Total	**$31,415**	**$14,076**

*Note: Totals may differ due to rounding.

b. Fiscal Impact on State Government

State government agencies are not impacted by these Proposed Amendments.

C. Fleet Example

1. Cost for Small Business and Typical Business

There are businesses impacted by the Proposed Amendments. No California businesses are directly impacted by the Proposed SLG Amendments because manufacturers will continue to comply with the ACT regulation. Certain private fleets could potentially purchase fewer ZEVs under the Proposed Amendments than under the Section 100 Baseline, if so, these fleets would face lower upfront costs when purchasing an ICE vehicle, but higher operating costs as described earlier in Estimated Direct Costs

As previously described, the Amendments to the LCFS program will provide stronger crediting support for hydrogen stations and more adequately supports development of stations that can accommodate the refueling demand of larger medium-duty hydrogen FCEV. These amendments are not expected to result in costs or savings to hydrogen station developers as LMD-HRI credits for each company and in aggregate across the LCFS program are unlikely to change as a result of this provision.

[234] County of Los Angeles v. State of California (1987) 43 Cal.3d. 46, 56; San Diego Unified School Dist. v. Commission on State Mandates (2004) 33 Cal.4th 859, 877.
[235] County of Los Angeles v. State of California, 43 Cal.3d. 46, 57-58.

2. Cost for an Individual

There are no costs borne to individuals because of the Proposed Amendments.

D. Economic Impact Analysis

There are no private fleets subject to the Proposed SLG Amendments.

However, there may be some private fleets indirectly impacted because staff is including an additional element, the Proposed Repeal, in this rulemaking. Statewide, the Proposed Although there is considerable uncertainty associated with federal actions. Staff still expect OEMs to honor the commitments made in the CTP agreement and it would be speculative to assume any significant cost impacts even if OEMs do not honor the agreement during the timeframe analyzed for the Proposed SLG Amendments.

With respect to engine standards, OEMs have already developed strategies and made their investments to comply with the Heavy-Duty Omnibus Regulation for the 2024 to 2026 model year for California sales. Per the CTP agreement, California has also committed to mostly align with the existing Federal 2027 engine certification standards resulting in more certainty and a consistent requirement nationwide. From a national perspective, engine OEMs are also expected to benefit from early lower emissions engines sales prior to the 2027 model year.

OEMs have been increasing ZEV sales since 2021 prior to 2024. Sales for the 2024 model greatly exceeded expectations. OEMs have built up credit banks that will keep them in compliance for several years. We expect manufacturers will continue to recoup their investments to certify more than 250 ZEV models and maintain competitiveness in the medium- and heavy-duty ZEV market. Also, a considerable number of ZEV sales are from outside California showing there is customer demand for ZEVs in the United States even where there are less regulatory requirements and complementary policies.

Amendments are not anticipated to increase or decrease the number of ZEVs in California, but it may shift who makes a new ZEV purchase. OEMs complying with the ACT regulation are expected to offer increasing amounts of ZEV for sale in California during the timeframe analyzed for the Proposed SLG Amendments. When a public agency utility is granted an exemption to purchase an ICE vehicle because of the additional flexibilities provided to them by the Proposed SLG Amendments, then the ZEV they did not purchase must be sold to a private fleet given OEMs must comply with the ACT regulation. Some private fleet operators may be indirectly affected by the Proposed SLG Amendments. For example, if a public agency utility fleet receives an exemption due to the Proposed SLG amendments, ultimately manufacturers subject to the ACT regulation will need to shift sales from the public agency utility fleet to a private fleet. Both of these shifts, the public agency utility fleet procuring one less ZEV and the private fleet procuring one more ZEV, will result in costs.

Staff estimate six station developers (NAICS 45431) may be impacted by the proposed amendments to the LCFS Regulation. This corresponds to the number of station developers that are currently approved for HRI crediting under the LCFS program, and who may be likely to be involved in the future. The proposed amendments to the LCFS Regulation will provide additional LCFS crediting revenue options for owners of hydrogen refueling infrastructure, which could include. This may be private fleets that own their own refueling infrastructure, or other station developers. The proposed modifications would likely increase credit generation for individual stations, but in tandem could have the effect of reducing the total number of stations that each fleet owner or station developer could certify through the LMD-HRI

provision. the net effect of the proposal will be zero additional economic benefit in aggregate, as total LMD-HRI credits are capped within the LCFS regulation, as well as the total LMD-HRI credits each participant can receive. As a result, while total credits provided per station are likely to increase as a result of this provision to incentivize larger hydrogen stations, total LMD-HRI credits for each company and in aggregate across the LCFS program are unlikely to change as a result of this provision.

3. The creation or elimination of jobs within the State of California.

The Proposed SLG Amendments change the criteria for approving exemptions for traditional utility-specialized vehicles used in public agency utility fleets, and do not directly create or eliminate jobs. The Proposed SLG Amendments allow public agency utilities to turnover their vehicles quicker than under the baseline which would result in higher direct costs at the public agency utility's discretion. These direct costs on public agency utilities will need to be covered by available funding sources, such as incentives, or revenue increases, such that the level of services and hence jobs are not affected. Changes in spending across the economy are expected to indirectly lead to corresponding increases and decreases in jobs for industries seeing changes in traditional utility-specialized vehicle sales. To the extent public agency utility fleet costs are recouped through user rates, this may shift consumer and business spending patterns, affecting jobs in those impacted industries.

1. The creation of new businesses or the elimination of existing businesses within the State of California.

The Proposed SLG Amendments provide increased purchasing flexibilities for public utility fleets and are not expected to directly create or eliminate businesses in California compared to the Section 100 Baseline. Indirect changes in spending patterns in the economy will increase or decrease sales in different industries. There is the potential for industries indirectly affected by the Proposed SLG Amendments seeing increased sales to see business creation, while industries realizing decrease sales to have businesses be eliminated.

2. The expansion of businesses currently doing business within the State of California.

The Proposed SLG Amendments apply to public agency utility fleets and will not directly expand businesses in California. Indirect changes in spending patterns in the economy will increase sales in specific industries. Businesses in industries with increased sales may have an opportunity for expansion.

4. Significant statewide adverse economic impact directly affecting business, including ability to compete.

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

5. The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.

The Proposed SLG Amendments are expected to benefit the health and welfare of California's residents and the state's environment by reducing exhaust emissions from traditional utility-

specialized vehicles. The element of the Proposed SLG Amendments requiring public utility fleets to bid for certain categories of ePTO-equipped traditional specialized utility vehicles is expected to have direct and immediate benefits for public agency utility worker safety by reducing exhaust emissions and noise at their jobsite.

X. Evaluation of Regulatory Alternatives

Government Code section 11346.2, subdivision (b)(4) requires CARB to consider and evaluate reasonable alternatives to the proposed regulatory action and provide reasons for rejecting those alternatives. This section discusses alternatives evaluated and provides reasons why these alternatives were not included. This chapter includes an analysis of alternatives relevant to the Proposed SLG Amendments without other changes and separately describes an analysis of alternatives associated with the Proposed Repeal.

A. Proposed State and Local Government Amendments

This section describes alternatives to the Proposed SLG Amendments. As explained below, no alternative to the Proposed SLG Amendments was found to be less burdensome and equally effective in achieving the purposes of the Proposed SLG Amendments in a manner that ensures full compliance with the authorizing law. In addition, the Board has not identified any reasonable alternatives that would lessen any adverse impact on small businesses since they are not impacted by the Proposed SLG Amendments.

Staff held two public workshops, held dozens of meetings with affected stakeholder groups, and received over a dozen comments in a public docket. Staff used this stakeholder input to develop two reasonable alternatives for further analysis including an assessment of cost and benefits analysis.

Table 32 shows the expected exemptions based on the adjusted populations for each of the alternatives and the Proposed SLG Amendments. The population of traditional utility-specialized vehicles was adjusted by 26% for Alternative 1 and 16% for Alternative 2 based on Table 9, to account for the subpopulation that would be expected to turnover by 10 years.

Table 32: Expected Exemptions for the Public Agency Utility Vehicle Population by Weight Class and Grouping with Projected Turnover for the Proposed SLG Amendments and Two Alternatives (for base year 2024)

Vehicle Group and Modeled Turnover	Proposed SLG Amendments	Alternative 1	Alternative 2
Traditional Utility-Specialized: 10 years	1,063	4,733	*649*
All Others: 13 years	12,517	0	*13,935*
Totals*	**13,580**	**4,733**	**14,584**

*Totals may differ due to rounding.

1. Proposed State and Local Government Amendments Alternative 1

Alternative 1 takes into consideration public agency utility feedback at the second workshop in October 2024. For Alternative 1 all vehicles owned and operated by a public agency utility qualify as "traditional utility-specialized vehicles" and 26% of those vehicles are kept up to 11-years and would be expected to apply for an exemption, as shown on Table 32. In addition, a

public agency utility can submit their highest daily usage data and CARB would calculate the mean value plus two standard deviations to compare to available BEV capacity, effectively resulting in more exemptions for the remaining vehicles in their fleet as shown on Table 33. Even though no ZEVs are purchased as shown on Table 36, the total cost for this alternative is the highest because more new ICE vehicles are purchased than for the other scenarios as shown on Table 35. This alternative results in increased emissions when compared to the Proposed SLG Amendments and Alternative 2.

2. Proposed State and Local Government Amendments Alternative 2

Alternative 2 scenario aligns with the staff's initially proposed SLG fleet amendments presented at the first public workshop in March 2024, which limited traditional utility-specialized vehicles to Class 4 and above vehicles equipped with PTO.

In Alternative 2 only 23% of the public agency utility fleet qualifies as "traditional utility–specialized vehicles" the remaining fall into the other category which includes more Class 2b-3 vehicles which are the least expensive. The total cost for this alternative is less than the Proposed SLG Amendments and Alternative 1 because less vehicles are purchased overall, as shown on Table 35 and Table 36.

3. Alternatives Comparison to Proposed State and Local Government Amendments

The following is an explanation of the two alternatives as they relate to the Proposed SLG Amendments. Alternative 1 allows for more exemptions than Alternative 2. Table 33 summarizes the exemption eligibility percentages for the Proposed SLG Amendments and the two alternatives for the traditional utility-specialized vehicles subpopulation, and Table 34 summarizes for the non-specialized or other subpopulation.

Table 33: Combined ZEV Purchase and Daily Usage Exemptions Eligibility Percentages For Traditional Utility Specialized Vehicles for the Proposed SLG Amendments, and Two Alternatives

Year	Proposed SLG Amendments	Alternative 1	Alternative 2	Section 100 Baseline
2026	30%	30%	30%	30%
2027	27%	27%	27%	27%
2028	54%	90%	54%	54%
2029	48%	90%	48%	48%

Table 34: Combined ZEV Purchase and Daily Usage Exemptions Eligibility Percentages for Other (non-specialized) Vehicles for the Proposed SLG Amendments, and Two Alternatives

Year	Proposed SLG Amendments	Alternative 1	Alternative 2	Section 100 Baseline
2026	10%	N/A	10%	10%
2027	10%	N/A	10%	10%
2028	24%	N/A	24%	39%
2029	21%	N/A	21%	34%

Table 35 below shows the cumulative number of utility-specialized vehicles purchased by 2029 for the Proposed SLG Amendments and the two alternatives. As shown in Table 33 for Alternative 1, starting in 2028, the remaining 90% of vehicles in a public agency utility fleet are eligible for exemptions. Also as shown on Table 33, the Proposed SLG Amendments and Alternative 2 have the same eligibility percentages, the only difference is less vehicles qualify as traditional utility-specialized vehicles for Alternative 2 which is why the least amount of traditional utility-specialized vehicles are replaced in Alternative 2.

Table 35: Total Cumulative Number of Utility-Specialized Vehicles in 2029 for the Proposed SLG Amendments and Two Alternatives Compared to Section 100 Baseline

Year	Proposed SLG Amendments	Alternative 1	Alternative 2
Class 2b-3	22	261	12
Class 4-5	40	471	21
Class 6-7	22	254	11
Class 8	53	620	28
Total	**137**	**1,606**	**72**

Notes: The total number of vehicles deployed for each of the scenarios is the same, turnover rate or replacement age and what qualifies as a traditional utility specialized vehicle varies.

Table 36 below shows the cumulative number of non-specialized vehicles purchased as ZEV by 2029 for the Proposed SLG Amendments and the two alternatives. As shown in Table 34 the Proposed SLG Amendments and Alternative 2 have the same eligibility percentages, the only difference is more vehicles do not qualify as traditional utility-specialized vehicles for Alternative 2 which is why more non-specialized ZEVs are purchased in this other category.

Table 36: Total Cumulative Number of ZEVs (non-specialized) in 2029 for the Proposed SLG Amendments and Two Alternatives Compared to Section 100 Baseline

Weight Class	Proposed SLG Amendments	Alternative 1	Alternative 2
Class 2b-3	126	0	436
Class 4-5	40	0	139
Class 6-7	11	0	38
Class 8	9	0	31
Total	**186**	**0**	**644**

Notes: The total number of vehicles deployed for each of the scenarios is the same, turnover rate or replacement age varies.

a. Emissions Comparison of Alternatives

The following tables summarize the exhaust emissions for each scenario compared to Section 100 Baseline. The emissions are in tons per year (tpy) and metric tons per year (MT/yr.), with a negative number indicating an increase in emission reductions.

Table 37: Statewide Tank-to-Wheel NOx, Annual Emissions of the Proposed SLG Amendments and Alternatives Relative to Section 100 Baseline

Year	Alternative 1 NOx (tpy)	Alternative 2 NOx (tpy)	Proposed SLG Amendments NOx (tpy)
2026	0.07	0.01	0.02
2027	0.28	0.04	0.06
2028	-0.89	-0.58	-0.61
2029	-1.68	-1.10	-1.16
Totals	**-2.21**	**-1.63**	**-1.69**

Note: NOx emissions are summarized in tons per year.

As shown in Table 37, the Proposed SLG Amendments, Alternatives 1 and 2 all reduce NOx emissions when compared to the Section 100 Baseline.

Table 38: Statewide Tank-to-Wheel $PM_{2.5}$, Annual Emissions of the Proposed SLG Amendments and Alternatives Relative to Section 100 Baseline

Year	Alternative 1 $PM_{2.5}$ (tpy)	Alternative 2 $PM_{2.5}$ (tpy)	Proposed SLG Amendments $PM_{2.5}$ (tpy)
2026	0.001	0.000	0.000
2027	0.002	0.000	0.000
2028	0.005	-0.006	-0.005
2029	0.007	-0.012	-0.010
Totals	**0.015**	**-0.018**	**-0.015**

Note: Total $PM_{2.5}$ emissions are summarized in tons per year.

Table 38 shows that Alternative 1 is expected to result in increased $PM_{2.5}$ emission when compared to Section 100 Baseline, whereas the Proposed SLG Amendments and Alternative 2 are expected to result in emission decreases when compared to the Section 100 Baseline. As shown on Table 35, Alternative 1 has more combustion vehicles purchased under the early access provisions than for Section 100 Baseline or Alternative 2.

Table 39: Statewide Tank-to-Wheel Annual Carbon Dioxide Emissions of the Proposed SLG Amendments and Alternatives Relative to Section 100 Baseline

Year	Alternative 1 CO_2 (MT/year)	Alternative 2 CO_2 (MT/year)	Proposed SLG Amendments CO_2 (MT/year)
2026	275	38	62
2027	689	94	155
2028	1,897	-3,088	-2,581
2029	2,941	-5,648	-4,775
Totals	**5,802**	**-8,603**	**-7,139**

Notes: CO2 emissions are summarized in metric tons per year. Totals are rounded.

Table 39 shows the Proposed SLG Amendments and Alternative 2 are expected to result in decreased GHG emissions when compared to Section 100 Baseline, whereas Alternative 2 is expected to result in GHG emissions when compared to the Section 100 Baseline. As shown on Table 36, Alternative 2 has more ZEVs purchased than for Section 100 Baseline or Alternative 1 whereas Alternative 1 has none.

b. Health Benefits Comparison of Alternatives

Table 4 summarizes the total number of incidents for all public health endpoints statewide that would be reduced from 2026 to 2029 for the Proposed SLG Amendments and alternatives compared to the Section 100 Baseline. The numbers in parentheses indicate the 95% confidence interval. Central numbers are used in the valuation of public health benefits using the IPT method summarized in Chapter IV, A. Because staff are proposing two significant concurrent changes, the effects on emissions and health benefits will be discussed in two ways. First, the effects of the Proposed Amendments are evaluated on a statewide basis. Second, the impact of the Proposed Amendments are evaluated specifically to public agency utility fleets.

Staff determined that the SLG portion of the ACF regulation alone would not result in more ZEV sales than already expected in the original baseline conditions in any year as the ZEV purchase requirements of the SLG component of the ACF regulation never exceeds the ZEV sales requirements under the ACT regulation. Therefore, the effect of the proposed changes including the Proposed Repeal means that all of the emissions benefits and health benefits originally estimated in Chapter II and III of the 2022 ISOR for the Advanced Clean Fleets regulation would not be achieved. The remainder of this chapter demonstrates the effects of Proposed SLG Amendments on public agency utilities.

Health BenefitsTable 40 summarizes the health benefits of the Proposed SLG Amendments compared to both alternatives.

Table 40: Health Benefits Comparisons to the Section 100 Baseline for the Proposed SLG Amendments, Alternative 1 and Alternative 2 (Thousand 2023$)

Year	Alternative 1	Alternative 2	Proposed SLG Amendments
2026	0	0	0
2027	-$324	0	0
2028	0	$1.09	$0.99
2029	0	$2.01	$1.84
Totals	**-$0.32**	**$3.10**	**$2.82**

Note: Only endpoints with incidents are quantified, 95% confidence interval values are not included.

Table 41 summarizes the air basin distribution of select avoided health endpoints for emission reductions under the Proposed SLG Amendments and alternatives, for 2026 through 2029 relative to Section 100 Baseline. All other endpoints are included in the statewide totals presented as Table 4.

Table 41: Avoided Asthma Symptoms and Work Loss Days from 2026 to 2029 for the Alternatives, by Air Basin

Scenario	Alternative 1	Alternative 2	Alternative 1	Alternative 2
Health Endpoint	Asthma Symptoms Avoided	Asthma Symptoms Avoided	Work Loss Days	Work Loss Days
Sacramento Valley	0 (0 - 0)	0 (0 - 1)	0 (0 - 0)	0 (0 - 0)
Salton Sea	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)
San Diego County	0 (0 - 0)	1 (0 - 1)	0 (0 - 0)	0 (0 - 0)
San Francisco Bay	0 (0 - 0)	1 (0 - 2)	0 (0 - 0)	1 (0 - 1)
San Joaquin Valley	0 (0 - 0)	1 (0 - 1)	0 (0 - 0)	0 (0 - 0)
South Central Coast	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)
South Coast	-1 (0 - -1)	4 (-2 - 11)	0 (0 - 0)	3 (3 - 3)

Notes: Totals may differ due to rounding. Numbers in parentheses throughout this table represent the 95% Confidence Interval (CI). Counties not tabulated have no quantifiable health benefits.

The incidents by air basin for avoided asthma symptoms and avoided work loss days vary by region with the South Coast having the most impacts. The Alternative 2 alternative is expected to result in the most benefits in the South Coast where over 4 times more incidents are avoided than for San Joaquin Valley, Sacramento Valley, and San Francisco Bay. The Alternative 1scenario results in cases of asthma symptoms and loss workdays in the South Coast, South Central Coast, San Joaquin Valley, Sacramento Valley, San Francisco Bay, and San Diego.

c. Cost Comparison of Alternatives

The Proposed SLG Amendments to the ACF regulation would give traditional utility-specialized vehicles early access to exemptions compared to the Section 100 Baseline scenario. Alternative 1 act as bookends for the Proposed SLG Amendments. Alternative 1 scenario defines the entire public agency utility fleet as traditional utility-specialized vehicles and gives these vehicles broader and earlier access to exemptions compared to the other scenarios. Alternative 2 scenario narrows the traditional utility-specialized vehicle definition and only gives these vehicles access to the exemptions a year later than for the Proposed SLG Amendments. Figure 17 and Figure 18 are stacked bar charts for Alternatives 1 and 2, respectively, with cost elements grouped as shown in Table 42.

Table 42: Summarized Cost Items

Cost Category	Components
Vehicle	Vehicle Cost, Sales Tax, Federal Excise Tax, and Residual Values
Fuel	Gasoline, Diesel, Electricity, Hydrogen Fuel Cost, Fuel Taxes, Diesel Exhaust Fluid (DEF) consumption, LCFS Revenue
Infrastructure	Charger Costs, Infrastructure Upgrades, Charger Maintenance, Maintenance Bay Upgrades
Maintenance	Vehicle Maintenance Costs, Heavy-Duty Inspection & Maintenance (HDI&M)
Other	Insurance, Transitional Costs, Reporting Costs

Figure 17: Total Estimated Statewide Incremental Cost of the Alternative 1 Relative to the Section 100 Baseline Scenario (Million 2023$)

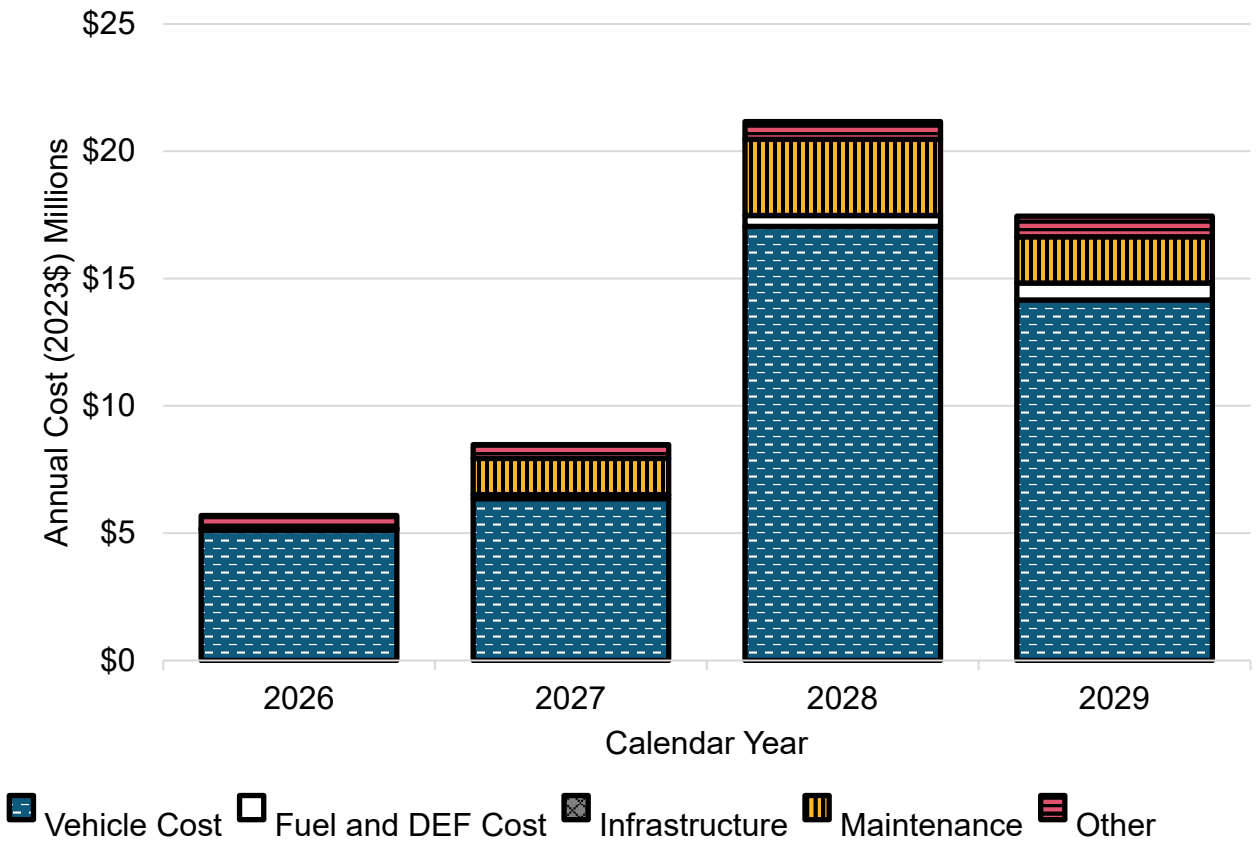


Figure 18: Total Estimated Statewide Incremental Cost of the Alternative 2 Relative to the Section 100 Baseline Scenario (Million 2023$)

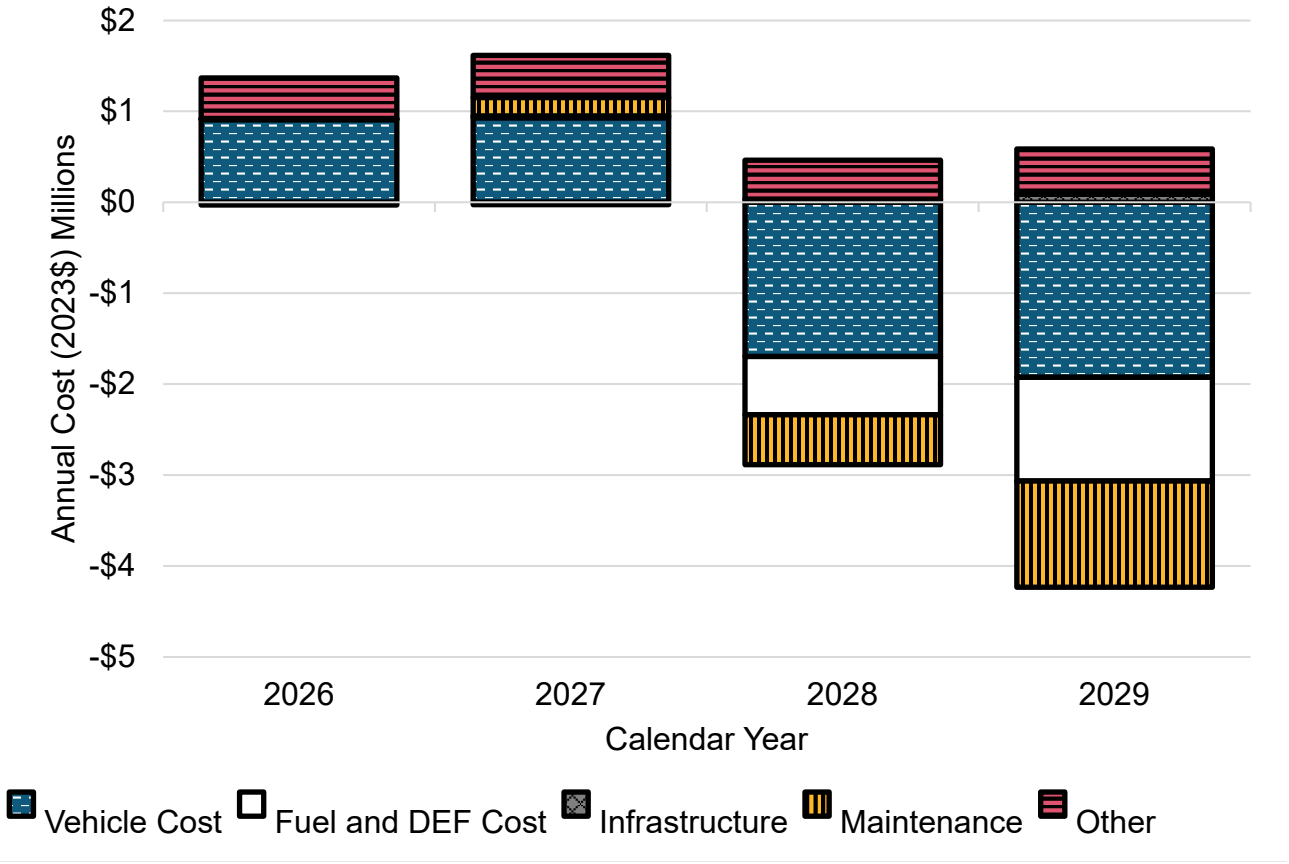


Table 43 shows the total cost and cost savings to Public Agency Utility Fleets for the Proposed SLG Amendments as well as the alternatives as compared to the Section 100 Baseline.

As discussed earlier, total cost-savings for public agency utility fleets are reflected as costs to private fleets and costs to public fleets are reflected as cost-savings to private fleets. From Table 43, the total statewide cost-savings for public agency utility fleets in Alternative 1 is $53 million and in Alternative 2 is $12 million which represents the costs to private fleets. Also, from Table 43, the costs for public agency utility fleets in Alternative 1 is $106 million and in Alternative 2 is $9 million which represents the cost-savings for private fleets. Between 2026 and 2029, the total statewide benefits, assuming all costs occur in California, would be $159 million in Alternative 1, $45 million in the Proposed SLG Amendments, and $21 million in Alternative 2, versus the Section 100 Baseline.

Table 43: Benefit and Cost Comparison of the Proposed SLG Amendments, and Two Alternatives When Compared to Section 100 Baseline, in Thousand 2023$

Measures	Alternative 1	Proposed SLG Amendments	Alternative 2
Total Costs	$106,018	$31,415	$8,818
Total Cost-Savings	$53,248	$14,076	$11,964
Total Benefits	$159,266	$31,415	$20,783

* The benefit-cost ratio (BCR) is then calculated by taking the ratio of total benefit and total costs.
** The total statewide benefits are the sum of cost-savings to private and public agency utility fleets.

d. Reasons for Rejecting the Alternatives

The Daily Use Exemption is a retrospective, iterative process designed to compare a fleet's daily usage needs with the battery capabilities of available BEVs in the same weight class and configuration as the ICE vehicle needing to be replaced. A fleet owner must therefore demonstrate that the existing ICE vehicle's usage needs for the fleet exceed those of available BEVs to qualify for the exemption. The process looks at 30-day usage patterns from the past 5 years (for mutual aid fleets) or from the past year to demonstrate the type of ICE vehicle needing to be replaced cannot be effectively replaced by an available BEV. As previously discussed, the legislature adopted AB 1594 to provide public agency utilities additional flexibilities to apply for the Daily Usage Exemption, and to allow such utilities to replace specified vehicles (traditional utility-specialized vehicles) earlier than other categories of vehicles, but clearly limited those additional flexibilities to a subset of vehicles in public utility fleets – namely, only vehicles that qualify as traditional utility-specialized vehicles.

Staff rejected Alternative 1 because it is not entirely consistent with the text and intent of AB 1594. Alternative 1 would apply the additional flexibilities to all vehicles owned and operated by a public agency utility, instead of only qualifying "traditional utility-specialized vehicles", which is not consistent with the text of the bill. Alternative 1 would cost public agency utilities more and produce greater emissions than the other alternatives.

Staff rejected Alternative 2 which limits traditional utility-specialized vehicles to only Class 4 and higher vehicles equipped with PTOs, because that alternative does not fully align with

public agency utility perceptions of what they consider to be traditional utility-specialized vehicles. Specifically, public agency utilities maintain that such vehicles must additionally include vehicles with 4- or 6-wheel drive, because those vehicles can drive off-road to access remote utilities, as well as Class 3 vehicles because of the critical services only those specialized equipment can perform. Although Alternative 2 is more cost effective and more effective at reducing emissions than the Proposed SLG Amendments, it is not the preferred alternative because the public agency utilities have indicated that it does not fully accommodate their needs, and AB 1594 directs CARB to consult with public agency utilities in implementing its directives.

B. Proposed Repeal of Portions of the Advanced Clean Fleets Regulation

This section describes alternatives to the Proposed Repeal.

1. Proposed Repeal Alternative 1

Proposed Repeal Alternative 1 would keep all elements of the existing ACF regulation in place including, CCR, title 13, sections 2014, 2015, and 2016. However, under this alternative, U.S. EPA, under the current federal administration, would not likely grant CARB a waiver or an authorization.[236,237,238,239,240] Therefore, portions of the ACF regulation would not be enforceable and would remain on hold for an undetermined amount of time, until further action is taken. This alternative would thus retain the uncertainty the Proposed Repeal is designed to eliminate. This alternative thus does not meet a core objective and would likely delay other methods to achieve needed emissions reductions. For these reasons, this alternative was rejected.

2. Proposed Repeal Alternative 2

Staff evaluated the alternative of revising and submitting the request for waiver and authorization for the addition of the ACF regulation to California's emissions control programs to U.S.EPA. However, it is likely the resubmission would not result in U.S. EPA granting California's request for waiver and authorization, enhancing uncertainty. It therefore does not appear to be reasonable to resubmit the ACF regulation to U.S. EPA under the current circumstances, and doing so would likely increase the uncertainty this Proposed Repeal is designed to eliminate. Staff has therefore rejected this alternative.

---

[236] *See* Donald J. Trump, *Twitter* (Sep. 18, 2019 11:19:24 AM EST) ("The Trump Administration is revoking California's Federal Waiver on emissions…").
[237] Davenport, Coral, *A 'Chilling Message': Trump Critics See a Deeper Agenda in California Feud*, N.Y. TIMES (web link: *https://www.nytimes.com/2019/10/03/climate/trump-california-environment.html*, Oct. 3, 2019).
[238] Baertlein, Lisa & Shepardson, David, *California withdraws clean truck EPA waiver request ahead of Trump inauguration*, REUTERS (web link: *https://www.reuters.com/business/environment/california-withdraws-clean-truck-epa-waiver-request-ahead-trump-inauguration-2025-01-15/*, Jan. 15, 2023).
[239] U.S. EPA Admin. Lee Zeldin, *Statement at White House* (web link: *https://rollcall.com/factbase/trump/transcript/donald-trump-remarks-executive-orders-white-house-february-13-2025/*, Feb. 13, 2025) ("Congress will have the opportunity through the Congressional Review Act to make that waiver go away.").
[240] U.S. EPA, *Trump EPA to Transmit California Waivers to Congress in Accordance with Statutory Reporting Requirements*, (web link: *https://www.epa.gov/newsreleases/trump-epa-transmit-california-waivers-congress-accordance-statutory-reporting*, Feb. 14, 2025).

C. Small Business Alternative

Small businesses are not state or local government agencies, but could include entities that own, operate or direct the operation of medium- to heavy-duty vehicles in a High Priority Fleet or Drayage fleet. The Proposed Repeal would remove the drayage and high priority fleet requirements. As such, there are no costs incurred by small businesses associated with the Proposed Repeal nor the Proposed SLG Amendments.

D. Performance Standards in Place of Prescriptive Standards

Government Code section 11346.2(b)(4)(A) requires that when CARB proposes a regulation that would mandate the use of specific technologies or equipment, or prescribe specific actions or procedures, it must consider performance standards as an alternative. The Proposed Amendments complies with Government Code section 11346.2(b)(4)(A) because it does not prescribe the usage of any specific technology or equipment or the utilization of specific actions or procedures. Rather, the Proposed SLG Amendments primarily provide specified fleets that own and operate traditional utility-specialized vehicles earlier access to pre-existing exemptions and additionally limit such fleets' ability to request Daily Use Exemptions to specialized utility vehicles when compared to the Section 100 Baseline. In other words, the Proposed SLG Amendments do not compel regulated parties to use any technologies or to take any actions but provide affected fleets the opportunity to request exemptions under prescribed requirements.

To the extent the Proposed SLG Amendments require fleets add requirements to solicit bids for ePTO systems, that element of the Proposed SLG Amendments does not require the purchase of vehicles equipped with ePTO. Therefore, the proposed amendments do not mandate specific technology or equipment but instead comprises a performance standard. Furthermore, the Proposed SLG Amendments define ePTO systems as an integrated vehicle technology system capable of providing power to auxiliary equipment or accessories, such as hydraulic pumps, compressors, liquid pumps, electrical power generators, or winches, which enables the vehicle (and integrated system) to produce no criteria pollutant (or precursor pollutant) or greenhouse gas exhaust emissions while the auxiliary equipment or accessories are being operated, and is completely silent as to what technologies are capable of meeting such performance standards (although CARB staff contemplate battery electric or possibly fuel cell electric technologies will likely be used by ePTO manufacturers). Even if this element of the Proposed SLG Amendments is determined to constitute a prescriptive standard, to the extent it establishes specific measurements, actions, or quantifiable means of limiting emissions or purchasing ZEVs, it would still be preferred over other performance-based alternatives. Furthermore, to the extent the Proposed SLG Amendments are determined to specify a sole means of compliance through specific actions, measures, or other quantifiable means, this means of compliance is necessary to accurately confirm compliance with the requirements to ensure that emissions from motor vehicles are permanently reduced.

E. Health and Safety Code section 57005 Major Regulation Alternatives

CARB estimates the Proposed Amendments will not have an economic impact on the state's business enterprises of more than $10 million in one or more years of implementation. The highest estimate of cost savings to Public Utility Fleets, and therefore costs to business

enterprise is estimated to be $5 million in 2028 (Table 30). Direct costs of the regulation fall primarily on local governments and are considered in the Fiscal Impact Section.

XI. Justification for Adoption of Regulations Different from Federal Regulations Contained in the Code of Federal Regulations

Currently, there are no comparable federal requirements for fleets to purchase or use ZE technologies for vehicles greater than 8,500 lbs. GVWR. Similarly, there is no comparable federal requirement similar to the requirements of AB 1594 incorporated into these amendments which requires additional flexibilities to be granted towards public agency utilities. As shown in this staff report and accompanying analyses, the cost of the ACF regulation as well as these Proposed SLG Amendments is justified by the substantial benefits to the public health, and welfare, and the environment, as described above and in the accompanying materials. This includes California's need to achieve the greatest degree of emissions reductions from criteria pollutants and greenhouse gases in order to reduce the serious risks to the health and welfare of Californians posed by such pollutants, to attain State and federal ambient air quality standards, to address climate change-induced harms and carbon neutrality goals, and to effectively advance the deployment of heavy-duty ZEVs as consistent with the goals established by the Governor in multiple Executive Orders and by the Board in California's SIP Strategy and the Climate Change Scoping Plan while meeting the spirit and intent of AB 1594.

In addition, the Proposed Repeal would maintain the status-quo and would not duplicate or conflict with federal regulations. [241] This repeal thus likewise creates no conflict with nor duplication of federal law.

XII. Public Process for Development of the Proposed Action

For the Proposed SLG Amendments that impact the stakeholders, staff followed the Board's long-standing practice that is consistent with Government Code sections 11346, subdivision (b), and 11346.45, subdivision (a), to hold public workshops and other meetings with interested persons. These informal pre-rulemaking discussions provided staff with useful information that was considered during development of the regulation that is now being proposed for formal public comment.

In March 2024, CARB staff began informing the public of the Proposed SLG Amendments to the ACF regulation and the development process. Staff hosted a public workshop on March 25, 2024, to introduce the requirements of AB 1594. This workshop was held virtual and in-person at the CARB's Office in Sacramento. A second workshop was held October 3, 2024, to present CARB's draft policy language for the Proposed SLG Amendments. Throughout this process CARB staff reached separately out directly to affected stakeholders and met with the six largest associations representing public agency utilities: Association of California Water

[241] CARB, Advanced Clean Fleets Initial Statement of Reasons, Pg. 270. "X. Justification for Adoption of Regulations Different from Federal Regulations Contained in the Code of Federal Regulations", August 30, 2022.

Agencies, California Water Association, California Municipal Utilities Association, California Association of Sanitation Agencies, Southern California Public Power Authority, and Northern California Power Agency. Over ten meetings were held with these external stakeholders to discuss topics discussed at the workshop including: what vehicles to include in the definition of traditional utility-specialized vehicle, alternative vehicle replacement criteria that does not solely rely on the age of the vehicle and alternatives for calculating daily use of traditional utility-specialized vehicles. CARB also met with numerous other interested stakeholders including fleets, technology providers, and other trade associations to discuss their thoughts and feedback on the Proposed SLG Amendments.

In addition, CARB opened a public comment docket to solicit feedback and received 17 public comments. In addition to the posted public comments, CARB received over 23 inquiries through the CARB ZEV Fleet email. In September 2024, CARB staff traveled to a community meeting in Imperial Valley California and spoke to several attendees about the Proposed SLG Amendments.

The existing ACF regulation Meeting and Events webpage hosted all information pertaining to the regulatory process including the public workshop announcements, workshop materials, the workshop recordings, drafted regulation language, public comments, a listserv signup link, and contact information.

The Proposed Repeal was added to the ACF rulemaking package when it became evident the Drayage and High Priority fleets portion would not receive a waiver from the EPA in the foreseeable future.

XIII. Documents Relied Upon

The following documents are the technical, theoretical, or empirical studies, reports, or similar documents relied upon in proposing these regulatory amendments, identified as required by Government Code, section 11346.2, subdivision (b)(3). Additionally, each appendix references the documents upon which it relies, as required by Government Code, section 11346.2, subdivision (b)(3). Notes: Each *“Explanatory Footnote”* is a footnote containing explanatory discussion rather than referencing specific documents relied upon. Each “Duplicate.” means the document is an identical document provided previously in the record. Lastly, the numbers match the footnotes as they existed on May 6, 2025, subsequent deletions from the record are shown as “Deleted.”, and documents added after May 6, 2025, are listed below starting with #253.

1. Explanatory footnote.
2. On September 27, 2019, U.S. EPA, in conjunction with NHTSA, published ‘‘The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program’’ (SAFE 1), 84 Fed. Reg. 51310 (Sept. 27, 2019) in which it withdrew a portion of the waiver it had previously granted for California’s Advanced Clean Cars (ACC) program– specifically, for California’s zero emission vehicle (ZEV) mandate and the GHG emission standards within California’s ACC program. In April 2022, EPA reconsidered its SAFE 1 action and rescinded its 2019 withdrawal of California’s waiver. 87 Fed. Reg. 14332 (Mar. 14, 2022).

3. Donald J. Trump, Twitter, September 18, 2019 11:19:24 AM EST, (“The Trump Administration is revoking California’s Federal Waiver on emissions in order to produce far less expensive cars for the consumer, while at the same time making the cars substantially SAFER. This will lead to more production because of this pricing and safety...”).
4. Davenport, Coral, A ‘Chilling Message’: Trump Critics See a Deeper Agenda in California Feud, NEW YORK TIMES, October 3, 2019.
5. Baertlein, Lisa & Shepardson, David, California withdraws clean truck EPA waiver request ahead of Trump inauguration, Reuters, January 15, 2025.
6. U.S. Environmental Protection Agency Admin. Lee Zeldin, 00:06:21-00:06:43 (23 sec), Statement at White House, February 13, 2025, (“Congress will have the opportunity through the Congressional Review Act to make that waiver go away.”).
7. U.S. Environmental Protection Agency, Trump EPA to Transmit California Waivers to Congress in Accordance with Statutory Reporting Requirements, February 14, 2025.
8. California Energy Commission, California’s Energy Governing Institutions, 2019, (weblink: *https://www.energy.ca.gov/sites/default/files/2019-06/Fact_Sheet_California_Energy_Governing_Institutions.pdf*, last accessed September 2024).
9. Public Policy Institute of California, Community Water System totals collected, 2023, (weblink: *https://www.ppic.org/publication/water-use-in-californias-communities/* , last accessed July 2024).
10. CARB History, (weblink: *https://ww2.arb.ca.gov/about/history*, last accessed April 29, 2025).
11. Explanatory Footnote.
12. CARB, 2022 State Strategy for the State Implementation Plan, September 22, 2022, (weblink: *https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf*, last accessed April 30, 2025).
13. CARB, 2022 Scoping Plan for Achieving Carbon Neutrality. The AB 32 Scoping Plan (web link: *https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents*, last accessed May 30, 2022).
14. Deleted
15. CARB, Updated Advanced Clean Fleets Inventory Analysis, 2023.
16. Explanatory footnote.
17. Explanatory footnote.
18. California Department of General Services, State Administrative Manual: Chapter 4100, Section 4126, Government Code 13332.09, Executive Order B-2-11, Management Memo 13-01, (web link: *https://www.dgs.ca.gov/Resources/SAM/TOC/4100/4126*, last accessed July 26, 2024).
19. Department of Transportation, Report No. 21-2660-071 October 2021, Table 1: Equipment Replacement Criteria, page 13, (web link: *https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/research-results/task2737-rrs-6-18-a11y.pdf*, last accessed October 3, 2024).
20. Truckee-Donner Public Utility District, Truckee-Donner Utility District webpage about us – what is a public utility?, (web link: *https://www.tdpud.org/about-us/what-is-a-public-utility*, last accessed October 22, 2024).

21. American Public Power Association, Benefits of Public Power, (weblink: *https://www.publicpower.org/system/files/documents/municipalization-benefits_of_public_power.pdf*, last accessed on September 5, 2024).
22. California Energy Commission, California's Energy Governing Institutions, June 2019, (weblink: *https://www.energy.ca.gov/sites/default/files/2019-06/Fact_Sheet_California_Energy_Governing_Institutions.pdf*, last accessed September 2024).
23. Los Angeles Department of Water and Power, (weblink: *https://www.ladwp.com/who-we-are/power-system*, last accessed September 27, 2024).
24. Sacramento Municipal Utility District, SMUD About Us, (weblink: *https://www.smud.org/Corporate/About-us*, last accessed September 27, 2024).
25. California Energy Commission, Energy Demand map, June 23, 2023, (weblink: *https://cecgis-caenergy.opendata.arcgis.com/documents/c8f940c510cd48319bfd645fa2122d7c/explore*, last accessed September 27, 2024).
26. Public Policy Institute of California, Community Water System totals collected, April 2023, (weblink: *https://www.ppic.org/publication/water-use-in-californias-communities/* , last accessed July 2024).
27. State Water Resources Control Board, Drinking Water page, Community Water Systems by Governance Types, March 25, 2021, (Weblink: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/california_water_systems.html#table8-1 , last accessed July 2024).
28. Public Policy Institute of California, Water Use in California, April 2023, (Weblink: *https://www.ppic.org/publication/water-use-in-california/* , last accessed July 2024).
29. Metropolitan Water District of Southern California, Annual Report for 2021 fiscal year, (weblink: *https://www.mwdh2o.com/media/11941/annual-progress-reports-2020-2021.pdf* , last accessed November 2024).
30. Water Education Foundation, Wastewater Treatment Process in California, 2013, (weblink: *Wastewater Treatment Process in California - Water Education Foundation*, last accessed on September 5, 2024).
31. California Association of Sanitation Agencies, About CASA, (weblink: About CASA – California Association of Sanitation Agencies (*casaweb.org*), last accessed October 1, 2024).
32. CSC Truck, Understanding Sewage Trucks and Their Uses, (weblink: *https://www.municipaltruck.com/understanding-the-different-types-of-sewage-trucks-and-their-uses/*, last accessed September 5, 2024).
33. Legislative Analyst's Office of California, Water Special Districts, March 2002, (Weblink: *https://www.lao.ca.gov/2002/water_districts/special_water_districts.html*, last accessed August 2024).
34. Association of California Water Agencies, About Us, 2024, (weblink: *https://www.acwa.com/about/*, last accessed August 2024).
35. CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf*, last accessed October 18, 2024).
36. CARB's Inventory.xls, 2025.

37. CARB, Advanced Clean Fleets website, List of Certified Medium and Heavy-Duty ZEVs, (weblink: *https://ww2.arb.ca.gov/applications/list-certified-medium-and-heavy-duty-zevs*, last accessed December 13, 2024).
38. CARB, New Vehicle and Engine Certification, (web link: *https://ww2.arb.ca.gov/our-work/programs/new-vehicle-and-engine-certification#6*, last accessed December 30, 2024).
39. CARB, Advanced Clean Fleets website, Streamlined ZEV Purchase Exemption List, (available at *https://ww2.arb.ca.gov/applications/streamlined-zev-purchase-exemption-list*, last accessed January 10, 2025).
40. Terex Utilities, Terex Utilities Announces New Zero-Emissions Bucket Truck with More Range and Payload Capacity, February 26, 2025, (weblink: *https://www.terex.com/utilities/en/about/news/terex-utilities-announces-new-zero-emissions-bucket-truck-with-more-range-and-payload-capacity*, last accessed February 28, 2025).
41. Vertikal, Terex's new all electric bucket truck, February 27, 2025, (weblink: *https://vertikal.net/en/news/story/45620/terex039s-new-all-electric-bucket-truc*k, last accessed February 28, 2025).
42. Department of Homeland Security, Hydrogen Fuel Cell-Powered Emergency Relief Truck Prototype Fact Sheet, August 2023, (web link: *https://www.ushydrogenalliance.org/news/hydrogen-fuel-cell-powered-emergency-relief-truck-fact-sheet*, last accessed July 14, 2025).
43. Fuel Cells Works, Accelera Sets Guinness World Record for Longest Journey by Hydrogen-Powered Truck, October 31, 2024, (web link: *https://fuelcellsworks.com/2024/10/31/fuel-cells/accelera-sets-guinness-world-record-for-longest-journey-by-hydrogen-powered-truck*, last accessed November 1, 2024).
44. General Motors, GM Plans to Broaden Electrification, Expanding Fuel Cells Beyond Vehicles" with the date January 19, 2022, (web link: GM Fuel Cell Pilot Program Extends Beyond Hydrogen Trucks 8-23-24.pdf, last accessed August 23, 2024).
45. Electrek, Lewis, Michelle, Volvo tests the world's first hydrogen-fueled articulated hauler, June 17, 2022, (Web link: *https://electrek.co/2022/06/17/volvo-tests-the-worlds-first-hydrogen-fueled-articulated-hauler/*, last accessed June 6, 2025).
46. Bloomberg. February 4, 2025. Inside Ford's Money-Guzzling EV Crisis. (web link: *https://www.bloomberg.com/news/features/2025-02-04/tariffs-deal-ford-another-ev-blow-after-f-150-lightning-falls-behind-cybertruck*, last accessed May 28, 2025).
47. Ford. October 22, 2024. Ford Comments on the Proposed Amendments to the Advanced Clean Trucks (ACT) Regulation and the Zero-Emission Powertrain Certification Test Procedure on (web link: *https://www.arb.ca.gov/lists/com-attach/67-actzepcert2024-UzUCa1YlAzQBWAdk.pdf*, last accessed May 27, 2025).
48. Stellantis. October 22, 2024. Stellantis' Comments to CARB's Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure (web link: *https://www.arb.ca.gov/lists/com-attach/56-actzepcert2024-B3RXJQFlWGcHbQVk.pdf*, last accessed on May 27, 2025).
49. Alliance for Automotive Innovation. October 22, 2024. Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure (web link: *https://www.arb.ca.gov/lists/com-attach/54-actzepcert2024-VzQFbABsUG5WNQNt.pdf*, last accessed May 28, 2025).

50. California HVIP, HVIP Catalog, (weblink: *https://californiahvip.org/vehiclecatalog/*, last accessed December 11, 2024).
51. PowerMag, Hickey, Tom, How ePTOs Are Reducing Bucket Truck Costs, Noise, and Emissions, October 17, 2023, (website: *How ePTOs Are Reducing Bucket Truck Costs, Noise, and Emissions* (powermag.com), last accessed October 2024).
52. Viatec, SmartPTO Specifications Sheet, September 20, 2023, (weblink: September 20, 2023, *https://www.viatec.us/specifications_smartpto_9-20-23/*, last accessed October 31, 2024).
53. National Renewable Energy Laboratory, NREL/TP-5400-5782 Investigation of Emissions Impacts from Hybrid Powertrains, January 2020, (weblink: *https://www.nrel.gov/docs/fy20osti/75782.pdf*, last accessed November 4, 2024).
54. Viatec, Viatec SmartPTO Information Packet for CARB.pdf, November 26, 2024.
55. Altec, Usage Exemption Meeting PowerPoint presentation, November 21,2024, Altec-CARB Final 11-21-24jjb.pdf (also available for download from, *https://ww2.arb.ca.gov/system/files/webform/public_comments/19706/Altec%20Informal%20CARB%20response_123124.pdf*, last accessed February 2, 2024).
56. Odyne, Letter to CARB on Practical and Near Zero-emissions Solution for PAUs Granted ZEV Purchase or Daily Usage Exemption for their Traditional Utility-Specialized Vehicle, October 24, 2024, (web link: *https://ww2.arb.ca.gov/system/files/webform/public_comments/19016/Odyne_AB1594PolicyRecomm_20241024.pdf*, last accessed February 2, 2025).
57. California Energy Commission, January 2020,Clean Transportation Program, FINAL PROJECT REPORT Plug-In Hybrid Medium Duty Truck Demonstration and Evaluation Plug-In Hybrid Medium-Duty Truck Demonstration and Evaluation, Page 10. (web link: *https://www.energy.ca.gov/publications/2020/plug-hybrid-medium-duty-truck-demonstration-and-evaluation*, last accessed February 2, 2025).
58. CalStart, Fact Sheet on 45W: Qualified Commercial Clean Vehicle Credit, (web link: *https://calstart.org/wp-content/uploads/2024/02/45W-Qualified-Commercial-Clean-Vehicle-Credit.pdf*, last accessed November 22, 2024).
59. Lascurain, M.B.; Franzese, O.; Capps, G.; et al. (2012). Medium Truck Duty Cycle Data from Real-World Driving Environments: Project Final Report (ORNL/TM-2012/240). Work performed by Oak Ridge National Laboratory for the U.S. DOE (web link: *https://info.ornl.gov/sites/publications/files/Pub39145.pdf*, last accessed October 14, 2024).
60. National Renewable Energy Laboratory Project Draft Final Report for the Period August 1, 2012, through March 31, 2014, “Data Collection, Testing and Analysis of Hybrid Electric Trucks and Buses Operating in California Fleets.” ARB Agreement Number 11-600, NREL Contract Number FIA-12-1763, April 15, 2014. (web link: *https://www.nrel.gov/docs/fy15osti/62009.pdf*, last accessed on October 15, 2024).
61. Implementation Manual for the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). October 31, 2024 (weblink: https://californiahvip.org/wp-content/uploads/2024/10/FY23-24-HVIP-Implementation-Manual-103124.pdf, last accessed May 23, 2025).
62. Argonne, Idling Reduction Savings Calculator, (web link: *https://www.anl.gov/sites/www/files/2018-02/idling_worksheet.pdf*, last accessed October 15, 2024).

63. Duplicate.
64. Duplicate.
65. EVESCO Electric Vehicle Energy Storage Company, Power Sonic, DC Mobile Charging Stations (weblink: *https://www.power-sonic.com/product/eves-120120/*, last accessed April 30, 2025).
66. Electrek, Lightning eMotor unveils 2nd generation portable DC fast charger, July 21, 2022, (weblink: *https://electrek.co/2022/07/21/lightning-emotors-portable-dc-fast-charger/*, last accessed April 30, 2025).
67. Kempower America, Kempower Moveable Charger. (weblink: *https://kempower.com/america/solution/kempower-movable-charger/*, last accessed April 30, 2025).
68. PV Magazine, Marija Maisch, Volvo launches battery energy storage system with integrated EV charger, April 7, 2025, (weblink: *https://www.pv-magazine.com/2025/04/07/volvo-launches-battery-energy-storage-system-with-integrated-ev-charger/*, last accessed April 10, 2025).
69. CARB, Page 70 of Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response, 2022, (weblink: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffsor.pdf*, last accessed December 24, 2024).
70. Senate Committee on Transportation, Chinn. R., Medium- and heavy-duty zero-emission vehicles: public agency utilities, July 7, 2024, (web link: *https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202320240AB1594#*, last accessed October 22, 2024).
71. CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-2: Purpose and Rationale for High-Priority and Federal Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf* , last accessed May 16, 2025).
72. CARB, March 23, 2023. Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf*, last accessed May 16, 2025).
73. CARB, August 4, 2023, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Second Notice of Public Availability of Modified Text and Availability of Additional Documents (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf*, last accessed May 16, 2025).
74. CARB, August 30, 2022, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, Appendix H-1: Purpose and Rationale for State and Local Government Fleet Requirements (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph1.pdf*, last accessed May 16, 2025).
75. Duplicate.
76. Duplicate.
77. Duplicate.

78. Duplicate.
79. Duplicate.
80. Duplicate.
81. Duplicate.
82. Duplicate.
83. Duplicate.
84. Duplicate.
85. Duplicate.
86. Duplicate.
87. Duplicate.
88. Duplicate.
89. Duplicate.
90. Duplicate.
91. Duplicate.
92. Duplicate.
93. Duplicate.
94. Duplicate.
95. Duplicate.
96. CARB, Advanced Clean Fleets Proposed 15-day Changes to the Proposed Regulation Order, March 23, 2023, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15da2.pdf*, last accessed April 2, 2025).
97. Duplicate.
98. Duplicate.
99. Duplicate.
100. Duplicate.
101. Duplicate.
102. Duplicate.
103. Duplicate.
104. Duplicate.
105. Duplicate.
106. Duplicate.
107. Duplicate.
108. Duplicate.
109. Duplicate.
110. CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation Staff Report: Initial Statement of Reasons, August 30, 2022, Appendix B: Updated Costs and Benefits Analysis (weblink: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15db.pdf*, last accessed March 27, 2025).
111. CARB, Updated Health Endpoints Bulletin, November 2022, (web link: *https://ww2.arb.ca.gov/sites/default/files/2022-11/California%20Air%20Resources%20Board%20Updated%20Health%20Endpoints%20Bulletin%20-%20Edited%20Nov%202022_0.pdf*, last accessed November 18, 2024).
112. U.S. Environmental Protection Agency, Integrated Science Assessment for Particulate Matter, Issue EPA/600/R-19/188, Pg 700-702, December 2019, (web link:

https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=347534, last accessed November 18, 2024).
113. U.S. Environmental Protection Agency, Technical Support Document (TSD) for the Final Revised Cross-State Air Pollution Rule Update for the 2008 Ozone Season NAAQS, March 2021 (web link: *https://www.epa.gov/sites/default/files/2021-03/documents/estimating_pm2.5-_and_ozone-attributable_health_benefits_tsd_march_2021.pdf*, last accessed November 18, 2024).
114. Duplicate.
115. U.S. Environmental Protection Agency, Integrated Science Assessment for Oxides of Nitrogen – Health Criteria, EPA/600/R-15/068, January 2016, (web link: *https://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=526855*, last accessed November 18, 2024).
116. CARB, ARB's Methodology for Estimating the Health Effects of Air Pollution, Retrieved March 13, 2023, (web link: *https://ww2.arb.ca.gov/resources/documents/carbs-methodology-estimating-health-effects-air-pollution*).
117. Fann N, Fulcher CM, Hubbell BJ., The influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution, Air Quality, Atmosphere & Health, 2:169-176, June 2009, (web link: *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2770129/*).
118. Fann N, Baker KR, Fulcher CM., Characterizing the PM2.5-related health benefits of emission reductions for 17 industrial, area and mobile emission sectors across the U.S. Environ Int.; 49:141-51, November 15, 2012. (web link: *https://www.sciencedirect.com/science/article/pii/S0160412012001985*).
119. Fann N, Baker K, Chan E, Eyth A, Macpherson A, Miller E, Snyder J., Assessing Human Health PM2.5 and Ozone Impacts from U.S. Oil and Natural Gas Sector Emissions in 2025, Environ. Sci. Technol. 52 (15), pp 8095–8103, July 13, 2018, (web link: *https://pubs.acs.org/doi/abs/10.1021/acs.est.8b02050*).
120. CARB, Updated Health Endpoints Bulletin, (web link: *https://ww2.arb.ca.gov/sites/default/files/2022-11/California%20Air%20Resources%20Board%20Updated%20Health%20Endpoints%20Bulletin%20-%20Edited%20Nov%202022_0.pdf*, retrieved November 2022).
121. U.S. Environmental Protection Agency, Technical Support Document (TSD) for the Final Revised Cross-State Air Pollution Rule Update for the 2008 Ozone Season NAAQS: Estimating PM2.5- and Ozone-Attributable Health Benefits (EPA-HQ-OAR-2020-0272), March 2021, (web link: *https://www.epa.gov/sites/default/files/2021-03/documents/estimating_pm2.5-_and_ozone-attributable_health_benefits_tsd_march_2021.pdf*, retrieved April 3, 2023).
122. U.S. Environmental Protection Agency, Environmental Benefits Mapping and Analysis Program - Community Edition: User's Manual, March 2023, (web link: *https://www.epa.gov/sites/default/files/2015-04/documents/benmap-ce_user_manual_march_2015.pdf?VersionId=7BSmKIlr0O6KccspW4pA.nMsu4EeLlrt*, retrieved April 4, 2023).
123. Duplicate.
124. Sears MR, Greene JM, Willan AR, Wiecek EM, Taylor DR, Flannery EM, Cowan JO, Herbison GP, Silva PA, Poulton R., A longitudinal, population-based, cohort study of childhood asthma followed to adulthood. N Engl J Med. 2003 Oct 9;349(15):1414-22.

doi: 10.1056/NEJMoa022363. PMID: 14534334., (weblink: *https://pubmed.ncbi.nlm.nih.gov/14534334/*, last accessed December 3, 2024).
125. McGeachie MJ, Yates KP, Zhou X, Guo F, Sternberg AL, Van Natta ML, Wise RA, Szefler SJ, Sharma S, Kho AT, Cho MH, Croteau-Chonka DC, Castaldi PJ, Jain G, Sanyal A, Zhan Y, Lajoie BR, Dekker J, Stamatoyannopoulos J, Covar RA, Zeiger RS, Adkinson NF, Williams PV, Kelly HW, Grasemann H, Vonk JM, Koppelman GH, Postma DS, Raby BA, Houston I, Lu Q, Fuhlbrigge AL, Tantisira KG, Silverman EK, Tonascia J, Weiss ST, Strunk RC., Patterns of Growth and Decline in Lung Function in Persistent Childhood Asthma, N Engl J Med. 374(19):1842-1852. doi: 10.1056/NEJMoa1513737. PMID: 27168434; PMCID: PMC5032024, May 12, 2016, Last accessed December 3, 2024.
126. Duplicate.
127. Deleted.
128. U.S. Environmental Protection Agency, Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances: Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review", November 2023, (web link: *https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf*, last accessed June 7, 2025).
129. Duplicate.
130. CARB, Valuation Estimates Spreadsheet. 2023.
131. Duplicate.
132. Explanatory Footnote.
133. Duplicate.
134. Explanatory Footnote.
135. Explanatory Footnote.
136. Explanatory Footnote.
137. Explanatory Footnote.
138. CARB, ACF Inventory Analysis Updated, 2023.
139. Duplicate.
140. CARB, Statewide ACF Benefits Summary 15DayChange 020123 Spreadsheet, 2023
141. Duplicate.
142. Explanatory Footnote.
143. Duplicate.
144. CARB, Final Environmental Analysis for the Proposed Advanced Clean Fleets Regulation, April 14, 2023, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffinalea.docx*, last accessed on November 20, 2024).
145. Duplicate.
146. Explanatory Footnote.
147. Duplicate.
148. CARB, April 23, 2021, 2020 Mobile Source Strategy, Oct. 28, 2021. Available at: *https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf*.
149. Duplicate.
150. Duplicate.

151. Duplicate.
152. Duplicate.
153. Duplicate.
154. Duplicate.
155. Explanatory Footnote.
156. Duplicate.
157. Duplicate.
158. Duplicate.
159. Duplicate.
160. Duplicate.
161. Duplicate.
162. Duplicate.
163. Duplicate.
164. Duplicate.
165. Duplicate.
166. Duplicate.
167. Duplicate.
168. Duplicate.
169. CEQA Guidelines Cal. Code Regs., tit. 14, § 15061(b)(3).
170. EDD Occupational Employment and Wage Statistics Dashboard - SOC code 49-0000 in year 2024. (weblink: *https://labormarketinfo.edd.ca.gov/data/oews-dashboard.html*, last accessed on November 20,2024).
171. Rentschler, J., Leonova, N., Global air pollution exposure and poverty. Nat Commun 14, 4432, July 22, 2023, (web link: *https://doi.org/10.1038/s41467-023-39797-4.*, last accessed November 20, 2024).
172. Hajat A, Hsia C, O'Neill MS. Socioeconomic Disparities and Air Pollution Exposure: a Global Review. Curr Environ Health Rep. 2015 Dec;2(4):440-50. doi: 10.1007/s40572-015-0069-5. PMID: 26381684; PMCID: PMC4626327, December 2015, (weblink: *http://link.springer.com/article/10.1007/s40572-015-0069-5*, last accessed July 14, 2025).
173. Duplicate.
174. CARB, CARB July 6, 2023 Response to EMA Request for Enforcement Discretion Under California Code of Regulations, Title 13 Section 2015(r) (weblink: *https://ww2.arb.ca.gov/resources/documents/carb-response-ema-request-enforcement-discretion*, last accessed March 18, 2025).
175. CARB, Advanced Clean Fleets Enforcement Notice. December 28, 2023; updated October 25, 2024. (web link: *https://ww2.arb.ca.gov/sites/default/files/2024-10/241025acfnotice_ADA.pdf*, last accessed March 18, 2025).
176. California Department of Industrial Relations. California Consumer Price Index (1955-2014). Accessed June 5, 2024 (web link:. *https://www.dir.ca.gov/oprl/CPI/EntireCCPI.PDF*, last accessed on October 23, 2024).
177. Duplicate.
178. CMUA Members list (weblink: *https://www.cmua.org/members* downloaded on March 18, 2024).
179. APPA Members List (weblink: *https://www.publicpower.org/public-power-california* downloaded on March 19, 2024).

180. ACWA Member directory (weblink: *https://www.acwa.com/about/directory/*, downloaded on March 18, 2024).
181. California Water Association, Regulated Water Utilities in California (weblink: *https://calwaterassn.com/about-cwa/regulated-water-utilities-in-california/*, downloaded on March 18, 2024).
182. SWRCB, September 2021. Safe Drinking Water Plan for California (weblink: *https://www.waterboards.ca.gov/drinking_water/safedrinkingwaterplan/*, downloaded March 19, 2024).
183. CEC, Publicly Owned Utility Report (weblink: *https://www.energy.ca.gov/data-reports/reports/energy-storage-targets-publicly-owned-utilities/publicly-owned-utility-reports*, downloaded on March 19, 2024).
184. CPUC, Regulated Water and Sewer Companies from 2019 Annual Reports (weblink: *https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/water-division/reports/wd-landing-page/water-utilities--total-connections.pdf*, downloaded on March 19, 2024).
185. CARB. 2021. ACT LER.
186. Department of Energy. FOTW #1362, Sept. 30, 2024: Pickup Trucks Had the Highest Average Age of All Vehicle Types in Operation in 2023. (web link: *https://www.energy.gov/eere/vehicles/articles/fotw-1362-sept-30-2024-pickup-trucks-had-highest-average-age-all-vehicle*, last accessed October 1, 2024).
187. Work Truck, March 1, 2023. Fleet Purchasing Outlook 2023: Deferred Replacement & Growth (web link: *https://www.worktruckonline.com/10193814/fleet-purchasing-outlook-2023-deferred-replacement-growth*, last accessed December 10, 2024).
188. Government Fleet. June 11, 2020. Understanding Fleet Age and Costs (web link: *https://www.government-fleet.com/10118478/understanding-fleet-age-and-costs*, last accessed on December 10, 2024).
189. Duplicate.
190. Explanatory footnote.
191. Duplicate.
192. Duplicate.
193. CARB, draft streamlined list of unavailable ZEVs, August 2024.
194. Duplicate.
195. CARB, Posted August 30, 2022, Appendix G Total Cost of Ownership Discussion Document Advanced Clean Fleets Regulation (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appg.pdf*, last accessed May 23, 2025)
196. CARB, New Vehicle Cost Analysis, September 9, 2021, (web link: *https://ww2.arb.ca.gov/sites/default/files/2021-08/210909costdoc_ADA.pdf*, last accessed January 2022).
197. U.S. EPA, Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2, October 25, 2016, (web link: *https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf*, last accessed January 2022).
198. CARB, 2020, Public Hearing to Consider the Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments – Staff Report: Initial Statement of Reasons (web link: *https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf*, last accessed January 2022).

199. Duplicate.
200. Argonne National Laboratory, R. Vijayagopal, D. Nieto Prada, and A. Rousseau, Fuel Economy and Cost Estimates for Medium- and Heavy-Duty Vehicles, 2019, (web link: *https://publications.anl.gov/anlpubs/2021/02/165815.pdf*, last accessed December 2021).
201. Argonne National Laboratory, 2021 Vehicle Technology Benefit Analysis – Medium- and Heavy-Duty Vehicles - Assumptions, 2021.
202. Strategic Analysis, Brian D. James, Fuel Cell Systems Analysis, June 9, 2021, (web link: *https://www.hydrogen.energy.gov/pdfs/review21/fc163_james_2021_o.pdf*, last accessed December 2021).
203. Strategic Analysis, Cassidy Houchins, Brian D. James and Yaset Acevedo, Hydrogen Storage Cost Analysis, June 7, 2021, (web link: *https://www.hydrogen.energy.gov/pdfs/review21/st100_james_2021_o.pdf*, last accessed December 2021).
204. Goldman Sachs, Electric vehicle battery prices are expected to fall almost 50% by 2026, October 7, 2024, (weblink: *https://www.goldmansachs.com/insights/articles/electric-vehicle-battery-prices-are-expected-to-fall-almost-50-percent-by-2025*, last accessed October 10, 2024).
205. Bloomberg New Energy Finance, Battery Pack Prices Fall to an Average of $132/kWh, But Rising Commodity Prices Start to Bite, November 30, 2021, (web link: *https://about.bnef.com/blog/battery-pack-prices-fall-to-an-average-of-132-kwh-but-rising-commodity-prices-start-to-bite/*, last accessed July 2022).
206. National Academies of Sciences, Engineering, and Medicine, Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy 2025-2035, 2021, (web link: *https://www.nap.edu/read/26092/chapter/1*, last accessed December 2021).
207. Duplicate.
208. Duplicate.
209. Explanatory Footnote.
210. Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Trucks, 90 Fed. Reg. 17371 (Apr. 25, 2025), (web link: *https://www.federalregister.gov/documents/2025/04/25/2025-07260/notice-of-request-for-public-comments-on-section-232-national-security-investigation-of-imports-of*, last accessed on May 27, 2025).
211. White House, March 26, 2025. Fact Sheet: President Donald J. Trump Adjusts Imports of Automobiles and Automobile Parts into the United States (web link: *https://www.whitehouse.gov/fact-sheets/2025/03/fact-sheet-president-donald-j-trump-adjusts-imports-of-automobiles-and-automobile-parts-into-the-united-states/#:~:text=The%2025%25%20tariff%20will%20be,on%20additional%20parts%20if%20necessary*, last accessed May 27, 2025).
212. Yale.edu., The Fiscal, Economic, and Distributional Effects of 25% Auto Tariffs. March 28, 2025. (web link: *https://budgetlab.yale.edu/research/fiscal-economic-and-distributional-effects-25-auto-tariffs*, last accessed May 27, 2025).
213. CNN, March 18, 2025. Trump's tariff problem: He might need a third or fourth term for his plan to work (web link: *https://www.cnn.com/2025/03/18/business/trump-tariffs-trade-war-manufacturing-jobs/index.html*, last accessed May 27, 2025).

214. International Council on Clean Transportation, Estimating Electric Vehicle Charging Infrastructure Costs Across Major U.S. Metropolitan Areas, August 2019 (web link: *https://theicct.org/sites/default/files/publications/ICCT_EV_Charging_Cost_20190813.pdf*, last accessed January 2022).
215. CARB, Infrastructure Cost Analysis, 2021.
216. U.S. Department of Energy – Energy Efficiency and Renewable Energy. Alternative Fuels Data Center, Charging Infrastructure Operation and Maintenance, 2021 (web link: *https://afdc.energy.gov/fuels/electricity_infrastructure_maintenance_and_operation.html* , last accessed January 2022).
217. GM, August 23, 2004. GM Plans to Broaden Electrification, Expanding Fuel Cells Beyond Vehicles, (web link: *https://investor.gm.com/news-releases/news-release-details/gm-plans-broaden-electrification-expanding-fuel-cells-beyond*, last accessed July 14, 2025).
218. Environmental Defense Fund, Gladstein, Neandros & Associates, March 2021 (web link: *http://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf*, last accessed January 2022).California Heavy-Duty Fleet Electrification Summary Report , March 2021 (web link: http://blogs.edf.org/energyexchange/files/2021/03/EDF-GNA-Final-March-2021.pdf, last accessed January 2022).
219. California Department of Tax and Fee Administration (CDTFA), Sales and Use Tax Rates, October 1, 2024, (web link: *https://cdtfa.ca.gov/taxes-and-fees/sales-use-tax-rates.htm*, last accessed December 17, 2024).
220. Transit Agency Subcommittee, Lifecycle Cost Modeling Subgroup, Report of Findings, 2017.
221. CARB, Updated: January 2018, Appendix G: Battery Electric Truck and Bus Efficiency Compared to Conventional Diesel Vehicles, 2019, (web link: *https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/appg.pdf*, last accessed July 2022).
222. Explanatory footnote.
223. Duplicate.
224. Penn State, LTI Bus Research and Testing Center, Motor Coach Industries D45 CRTeLE, December 2020, (web link: *https://apps.altoonabustest.psu.edu/buses/reports/522.pdf?1608733416*, last accessed January 2022).
225. Penn State, LTI Bus Research and Testing Center, GreenPower Motor Company EV Star, April 2020, (web link: *http://apps.altoonabustest.psu.edu/buses/reports/515.pdf?1603821665*, last accessed January 2022).
226. CEC, Transportation Energy Demand Forecast Results, November 28, 2023, (web link: *https://www.energy.ca.gov/sites/default/files/2023-11/Transportation_Energy_Demand_Forecast_Results_ada.pdf*, last accessed July 14, 2025).
227. Argonne National Laboratory, Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool, 2023, (Web link: *https://greet.es.anl.gov/afleet*, last accessed 2023).

228. CARB, LCFS Credit Price Calculator, 2021, (web link: *https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/dashboard/creditvaluecalculator.xlsx*, last accessed January 2022).
229. CARB, Monthly LCFS Credit Transfer Activity Reports, 2023, (web link: *https://ww2.arb.ca.gov/resources/documents/monthly-lcfs-credit-transfer-activity-reports*, last accessed October 15, 2024).
230. CARB, LCFS Pathway Certified Carbon Intensities, 2024, (weblink: *https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities*, last accessed June 7, 2025).
231. Argonne National Laboratory, Comprehensive Total Cost of Ownership Quantification for Vehicles with Different Size Classes and Powertrains, July 2021, (web link: *https://publications.anl.gov/anlpubs/2021/05/167399.pdf*, last accessed July 14, 2025).
232. Forerunner Insurance Group, What does Average semi truck insurance costs for owner operators?, 2018, (web link: *https://forerunnerinsurance.mysites.io/what-does-average-semi-truck-insurance-costs-for-owner-operators/*, last accessed July 14, 2025).
233. Commercial Truck Insurance HQ, Average Semi Truck Insurance Cost, 2019, (web link: *https://www.commercialtruckinsurancehq.com/average-semi-truck-insurance-cost*, last accessed January 2022).
234. Strong Tie Insurance, Why You Need a Commercial Semi Truck Insurance Coverage, 2022, (web link: https://www.strongtieinsurance.com/semi-truck-insurance/, last accessed January 2022).
235. Duplicate.
236. U.S. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Logisticians, at *https://www.bls.gov/ooh/business-and-financial/logisticians.htm* (visited September 25, 2024).
237. U.S. Bureau of Labor Statistics, Table 2. Civilian workers by occupational and industry group, September 2024, (web link: *https://www.bls.gov/news.release/ecec.t02.htm*, last accessed January 17, 2025).
238. Nissan Motor Corporation, Nissan LEAF batteries to light up Japanese town, 2018 (web link: *https://global.nissannews.com/en/releases/180322-01-e?lang=en-US*, last accessed July 14, 2025).
239. BMW Group, BMW Group, Northvolt and Umicore join forces to develop sustainable life cycle loop for batteries (web link: *https://www.press.bmwgroup.com/global/article/detail/T0285924EN/bmw-group-northvolt-and-umicore-join-forces-to-develop-sustainable-life-cycle-loop-for-batteries*, last accessed January 2022).
240. County of Los Angeles v. State of California (1987) 43 Cal.3d. 46, 56;
241. San Diego Unified School Dist. v. Commission on State Mandates (2004) 33 Cal.4th 859, 877.
242. Duplicate.
243. Duplicate.
244. Duplicate.
245. Duplicate.
246. Duplicate.
247. Duplicate.
248. Duplicate.

249. CARB. 2025. Emissions Analysis.xls.
250. CARB. 2025. Cost Analysis.xls.
251. CARB. 2025. Health Benefits Analysis.xls.
252. Duplicate.
253. The White House H.J. Res. 87, 88, 89, June 2025.
254. CA Attorney General, June 2025.
255. CTP CARB and EMA, 2023.

XIV. Appendices

- Appendix A-1: Proposed Regulation Order for State and Local Government
- Appendix A-2: Proposed Regulation Order for Low Carbon Fuel Standard
- Appendix A-3: Proposed Regulation Order for High Priority and Federal Fleets
- Appendix A-4: Proposed Regulation Order for Drayage Trucks