BEFORE THE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the Matter of California's Request for Waiver Pursuant to Clean Air Act Section 209(b) and For Authorization Pursuant to Clean Air Act Section 209(e)(2) for California's Advanced Clean Fleets (ACF) Regulation	))))))

CLEAN AIR ACT § 209(b) WAIVER AND § 209(e) AUTHORIZATION REQUEST SUPPORT DOCUMENT SUBMITTED BY THE CALIFORNIA AIR RESOURCES BOARD
November 15, 2023

I. INTRODUCTION AND OVERVIEW

This document supports the request of the California Air Resources Board (CARB or Board) that the Administrator of the United States Environmental Protection Agency (EPA) take waiver action pursuant to Clean Air Act (CAA) section 209(b) in light of CARB's addition of its Advanced Clean Fleets (ACF) regulation (hereinafter "ACF regulation" or "Regulation") to the State's new motor vehicle emission control program. The ACF regulation requires affected state and local governmental fleets, drayage truck fleets, federal governmental agency fleets, and large commercial fleets that own, lease, or operate on-road medium-duty and heavy--duty vehicles, and light-duty package delivery vehicles,[1] to incorporate zero emission vehicles into their fleets, beginning in 2024.[2] The ACF regulation additionally requires that all new California-certified medium- and heavy-duty vehicles sales be zero-emitting vehicles starting in 2036. Elements of the ACF regulation also apply to off-road engines and equipment; specifically off-road yard tractors, and CARB requests that EPA take authorization action pursuant to CAA section 209(e) for those elements of the ACF regulation.

Mobile sources and the fossil fuels that power them are the largest contributors in California to the emissions of harmful air pollutants that result in the formation of ozone, greenhouse gas (GHG) emissions, fine particulate matter (PM2.5), and toxic diesel

[1] The emissions standards and accompanying enforcement procedures applicable to light-duty package delivery vehicles were established by CARB's Advanced Clean Cars II Regulation, and are accordingly not included in this waiver and authorization request.

[2] The Advanced Clean Fleets regulation is comprised of new title 13, California Code of Regulations (Cal. Code Regs.) sections 2013 through 2013.4, sections 2014 through 2014.3, sections 2015 through 2015.6, and section 2016.

particulate matter (PM). Among other harms, these pollutants collectively increase premature mortalities, cause cardiovascular and respiratory diseases, increase the risk of cancer, and threaten the stability of the climate. In California, the transportation sector accounts for 41 percent of total GHG emissions (50 percent when upstream emissions from fuel is included) and is a major contributor to oxides of nitrogen (NOx) and PM emissions. Medium- and heavy-duty vehicles contribute a quarter of the transportation sector's GHG emissions and a third of the transportation sector's NOx emissions, a disproportionately high share considering these vehicles represent only about 1.8 million trucks among the 30 million vehicles registered in California.[3]

The ACF regulation constitutes the latest development in CARB's decades-long history of promulgating increasingly stringent emission standards for mobile sources that are needed to protect the public health and welfare of Californians by improving air quality and by mitigating the harms posed by greenhouse gases. The ACF regulation complements CARB's recently adopted Advanced Clean Trucks (ACT) regulation, and will help advance the introduction of zero-emission (ZE) technologies into the medium- and heavy-duty sector to help California attain both federal and state ambient air quality standards, and its commitments to achieve targets for carbon neutrality and reduce anthropogenic greenhouse gas emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279[4] and established by the 2022 Scoping Plan.[5]

CARB projects that the ACF regulation will cumulatively reduce statewide emissions by approximately 146,872 tons of oxides of nitrogen (NOx), 6,875 tons of fine particulate matter (PM2.5), and 327,000 million metric tons of carbon dioxide emissions, a greenhouse gas, from 2024 to 2050.[6]

Section II of this document provides a brief description of the Board's rulemaking action. Section III presents a summary of the elements of the ACF Regulation that require waiver and authorization actions. Section IV identifies the principles applicable to waivers and authorizations, Section V demonstrates that EPA has no basis to deny the requested waiver, and Section VI demonstrates that EPA has no basis to deny granting the requested authorization. The remainder of Section I discusses waivers that EPA has previously granted for regulations targeting California on-road heavy-duty and medium-duty engine and vehicles.

A. Preexisting California On-Road Medium to Heavy-Duty Engine and Vehicle Emission Regulations

[3] CARB, Staff Report, Initial Statement of Reasons, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation, Executive Summary, p. 1

[4] AB 1279 (Muratsuchi, Stats. 2022, ch. 337).

[5] CARB, 2022 Scoping Plan For Achieving Carbon Neutrality, November 16, 2022 (web link: https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf, last accessed January 2023).

[6] CARB, Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response for Public Hearing to Consider the Advanced Clean Fleets Regulations (FSOR), p. 16.

1. On-Road Medium- and Heavy-Duty Diesel, and Otto-Cycle Engine Emission Standards

California regulations classify motor vehicles as light-duty, medium-duty, or heavy-duty based on their gross vehicle weight ratio (GVWR), a measure of the vehicle's maximum loaded weight. The current heavy-duty vehicle (HDV) classification is further subdivided into three subcategories: light heavy-duty (14,001 to 19,500 pounds GVWR), medium heavy-duty (19,501 to 33,000 pounds GVWR), and heavy heavy-duty (greater than 33,000 pounds GVWR). California's classification of HDVs are similar, but not identical, to the federal classification of HDVs (which includes vehicles that California classifies as medium-duty vehicles), as indicated by Table 1 below.

Table 1- Federal and California Heavy-Duty Vehicle Weight Classes

GVWR (pounds)	8,501-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	26,001-33,000	33,001+
Federal	Light heavy-duty				Medium heavy-duty		Heavy heavy-duty
California (starting 1995 MY)	Medium-duty		Light heavy-duty		Medium heavy-duty		Heavy heavy-duty
California	ACCII ZEV (starting 2026 MY)		Zero-Emission Powertrain (ZEP) Certification Required (starting 2036 MY)				
California starting 2024 MY	ACT and ACF Regulation						

California first regulated HDV exhaust emissions in 1969. EPA first regulated HDVs in 1974. EPA has granted California numerous waivers in the intervening decades as CARB has added or amended heavy-duty engine and vehicle emissions standards into the State's new motor vehicle emissions program.

In 1990, CARB adopted amendments to the exhaust emission standards and associated test procedures for light-duty trucks, medium-duty vehicles and engines, and light HDVs and engines, and additionally adopted amendments that redesignated vehicles rated from 8,501 to 14,000 pounds GVWR, formerly classified as HDVs, as medium-duty vehicles.[7] EPA granted California waivers in light of the inclusion of these new definitions of medium-duty vehicles and the standards applicable to this class of vehicles into the State's new motor vehicle emissions program.[8]

[7] EPA does not have a "medium-duty vehicle" category, but classifies heavy-duty vehicles between 8,501 and 14,000 lbs GVWR as light heavy-duty vehicles.

[8] 59 Fed. Reg. 48625 (Sept. 22, 1994), 63 Fed. Reg. 18403 (Apr. 15, 1998). The emissions standards for medium-duty vehicles specifically provided manufacturers the option to certify engines used in medium-duty diesel and incomplete Otto-cycle vehicles to engine dynamometer based standards in lieu of chassis dynamometer based standards.

2. California Omnibus Regulation

On September 9, 2021, CARB adopted the Omnibus regulation, which primarily establishes significantly more stringent criteria pollutant exhaust emission standards and accompanying enforcement procedures for new 2024 and subsequent model year (MY) California on-road medium- and heavy-duty engines and vehicles. EPA has not yet issued a final determination on CARB's waiver request in light of the addition of the Omnibus regulation to California's program.

3. Heavy-Duty Tractor-Trailer Greenhouse Gas Regulation

In 2008, CARB promulgated emission standards and other requirements related to the control of GHG emissions from new and in-use 53-foot or longer box-type trailers and from new (2011 and subsequent model year) and in-use tractors that haul such trailers on California highways.[9] CARB subsequently amended the Tractor-Trailer GHG regulation in 2010 and 2012. The Tractor-Trailer GHG regulation primarily requires new and in-use heavy-duty Class 7 and Class 8 on-road tractors and new and in-use 53-foot or longer dry van and refrigerated-van trailers that are pulled by such tractors on California highways to be equipped with specified aerodynamic technologies and low-rolling resistance tires that reduce the aerodynamic drag and rolling resistance forces acting on such tractors and trailers. In 2013, CARB requested that EPA grant a waiver to California in light of the addition of a subset of the Tractor-Trailer GHG regulation's requirements; specifically, the elements applicable to new 2011 through 2013 model year Class 8 tractors equipped with integrated sleeper berths and to new 2011 and subsequent model year 53-foot or longer dry van and refrigerated-van trailers that are pulled by such tractors on California highways. EPA granted California's waiver request on July 30, 2014.[10]

4. Greenhouse Gas Regulations

In 2014, CARB adopted the California Phase 1 GHG regulation, which established GHG emission standards and associated test procedures for new 2014 and subsequent model year medium- and heavy-duty engines used in combination tractors and vocational vehicles that were identical to the corresponding GHG emission standards and associated test procedures for diesel and gasoline-fueled heavy-duty engines in EPA's Phase 1 GHG regulation. EPA granted California's associated waiver request in 2016.[11]

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[9] The Tractor-Trailer GHG regulation is set forth at Sections 95300 through 95312, title 17, California Code of Regulations.

[10] 79 Fed. Reg. 46256 (Aug. 7, 2014).

[11] 81 Fed. Reg. 95982 (Dec. 29, 2016).

In 2016, EPA adopted the federal Phase 2 GHG regulation, which established GHG emission standards and associated test procedures for new 2021 and subsequent model year medium and heavy-duty engines and vehicles, as well as 2018 and subsequent model year trailers.

CARB adopted the California Phase 2 GHG regulation in 2018. The California Phase 2 GHG regulation largely aligns California's GHG emissions standards and associated test procedures for new medium- and heavy-duty engines and vehicles with the emissions standards and associated test procedures of the corresponding U.S. EPA Phase 2 GHG regulation. CARB will request that EPA issue a waiver in light of the California Phase 2 GHG regulation in a separate waiver request.

5. Advanced Clean Trucks, Zero-Emission Airport Shuttle, and Zero-Emission Powertrain Certification Regulations

In 2019, CARB adopted the Zero-Emission Airport Shuttle (ZEAS) regulation, that sets steadily increasing ZEAS fleet composition requirements for airport shuttle fleet owners that service the 13 largest California airports. CARB also adopted the Zero Emission Powertrain (ZEP) Certification regulation in 2019. That regulation establishes optional certification procedures and requirements for 2021 and subsequent model year battery-electric and hydrogen fuel cell powertrains intended for use in HDVs exceeding 14,000 lbs GVWR and incomplete medium-duty vehicles. Although the ZEP Certification regulation characterizes the certification procedures as optional, the ZEAS, ACT, and ACF Regulation require affected medium- and heavy-duty vehicles to be powered by powertrains that are certified in accordance with ZEP certification procedures and requirements.

In 2021, CARB adopted the ACT regulation, which requires manufacturers to produce and sell increasing quantities of ZE medium- and heavy-duty vehicles in California beginning in the 2024 model year.

EPA granted California's waiver requests in light of the addition of the ACT, ZEAS, and ZEP Certification regulations to California's program on March 30, 2023.[12]

II. OVERVIEW OF CARB'S ADVANCED CLEAN FLEETS RULEMAKING ACTION

On October 27, 2022, CARB conducted its first public hearing to consider the proposed ACF regulation. Following that public hearing, staff, pursuant to the direction of the Board, subsequently made additional modifications to the initially proposed ACF regulation available for a public comment period that ended on April 7, 2023 (Enclosures 5 to 6).

On April 28, 2023, CARB approved the adoption of the ACF regulation by Resolution 23-13 (Enclosure 16) at the second public hearing for the ACF regulation. At the

[12] 88 Fed. Reg. 20,688 (April 6, 2023).

direction of the Board, after making modifications to the ACF regulation available for supplemental public comment, CARB's Executive Officer issued Executive Order R-23-003 on August 28, 2023 (Enclosure 19).

On September 29, 2023, the California Office of Administrative Law (OAL) approved the ACF regulation (Enclosure 29), and filed the ACF regulation with California's Secretary of State. The ACF regulation became operative under state law on October 1, 2023.

III. SUMMARY OF THE ADVANCED CLEAN FLEETS REGULATION

This section provides an overview of the emissions-related and accompanying enforcement provisions of the ACF regulation added to California's motor vehicle emission control program for which CARB is requesting a waiver. More detailed descriptions of these provisions are provided in the Staff Report: Initial Statement of Reasons (Staff Report, Enclosures 2 and 3), the Notices of Public Availability of Modified Text and Additional Documents and Information (Enclosures 5, 6, and 18), and the Final Statement of Reasons (FSOR, Enclosure 27).

The ACF Regulation is comprised of four primary components. Three of those components primarily require the following specified fleets that own, operate, or direct the operations of medium- and heavy-duty on-road vehicles and light-duty package delivery vehicles in California to acquire medium- and heavy-duty zero emission vehicles (ZEVs)[13] and light-duty package delivery ZEVs beginning in the 2024 model year: state and local governmental (SLG) fleets, drayage truck fleets, and federal governmental agency and large commercial fleets (hereinafter "high priority and federal" (HPF) fleets). The fourth component requires that all new California-certified medium- and heavy-duty vehicles be zero-emitting vehicles, starting in the 2036 model year.

The ACF regulation's fleet requirements do not apply to vehicles equipped with two-engines, school buses, military tactical vehicles, historical vehicles, heavy cranes, emergency vehicles, dedicated snow removal vehicles, vehicles awaiting sale,[14] test fleet vehicles, or buses that are subject to CARB's Innovative Clean Transit regulation. Airport shuttle buses that are subject to the ZEAS regulation are fully exempted from the SLG fleet requirements, and qualify for exemptions from the HPF requirements until 2027.[15] Trucks owned by transit agencies are exempt until 2030.

[13] A zero emission vehicle is a vehicle with a zero-emissions powertrain that produces zero exhaust emission of any criteria pollutant (or precursor pollutant) or greenhouse gas under any possible operational modes of operations. Cal. Code Regs. §§ 2013(b), 2014(b), 2015(b),

[14] "Vehicle awaiting sale" means a vehicle in the possession of a dealer, financing company, a private party, or other entity that does not intend to operate the vehicle in California or offer the vehicle for hire for operation in California, and it is operated only to demonstrate functionality to potential buyers, to move short distances to make repairs, or for maintenance or storage. It also includes new vehicles when driven to be delivered to the fleet owner. Cal. Code Regs. §§ 2013(b), 2015(b),

[15] HPF fleets that are also subject to the ZEAS regulation may elect to exempt regulated airport shuttle buses from the HPF fleet requirements to acquire ZEVs until January 1, 2027.

There are currently no comparable federal fleet requirements or requirements to produce medium-or heavy-duty ZEVs. The ACF regulation is projected to increase the quantities of medium- and heavy-duty ZEVs in California beyond the numbers projected from the ACT regulation by roughly 190,000 in 2035, 570,000 in 2045, and 740,000 in 2050.[16]

A. State and Local Government Fleets[17]

This element of the ACF regulation applies to any California state or local government (SLG) agency that owns, leases, or operates one or more vehicles with a gross vehicle weight rating (GVWR) greater than 8,500 lbs. that are operated in California. Beginning January 1, 2024, SLG fleets must purchase at least fifty percent of the total number of their vehicle purchases as ZEVs or near zero emission vehicles (NZEVs)[18]. SLG fleets in designated low population counties are exempted from this requirement, but beginning January 1, 2027, all SLG fleets must purchase one hundred percent of the total number of their vehicle purchases as ZEVs or NZEVs. SLG fleets do not have to retire ICE vehicles in order to purchase new ZEV or NZEV unless they opt-in the ZEV Milestones Option. Yard tractors are not likely to be part of a SLG fleet since these vehicles are typically only utilized in drayage operations.

B. Drayage Truck Fleets[19]

The drayage truck fleet purchase requirements apply to Class 7-8 drayage trucks operating at intermodal seaports and railyards. These drayage trucks are required to transition to ZEVs by 2035. The requirements include a phased-in approach for drayage trucks. All drayage trucks must register in TRUCRS[20] starting in late 2023, and visit a regulated seaport or intermodal railyard at least once each calendar year to remain in drayage service. Existing (or "legacy") drayage trucks are powered by internal combustion engines (ICE), these trucks may continue to be registered in TRUCRS

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[16] ISOR Section VIII. Economic Impacts Assessment, B.2. Vehicle Population, page 167; FSOR p. 56.

[17] CARB is only providing this description of the fleet requirements applicable to state and local governmental agencies to inform EPA of the full scope of the ACF regulation. Because this element of the ACF requires state and local governmental agencies to purchase vehicles meeting specified emissions standards, it is not preempted by CAA section 209(a). *Engine Mfrs. Ass'n v. South Coast Air Quality Mgmt. Dist.*, 498 F.3d 1031, 1048–49 (9th Cir. 2007) (rules directing state and local governments to purchase, procure, lease, or contract for use of vehicles meeting specified air pollution criteria are not preempted by CAA section 209(a) because of the market participant doctrine).

[18] NZEVs are vehicles that are capable of operating like a ZEV for a minimum number of miles, using electricity stored on-board the vehicle. Cal Code Regs., tit. 13, §§ 2013(b), 2015(b)..

[19] Drayage trucks are typically in-use class 7 and 8 on-road vehicles that transport containers and bulk goods to and from seaports and intermodal railyards. Land ports of entry, which provide controlled entry to or departure from the United States, are not considered seaports or intermodal railyards.

[20] Truck Regulation Upload, Compliance, and Reporting System (TRUCRS) database (https://ssl.arb.ca.gov/trucrs_reporting/login.php) is a secure, on-line database that is used by fleets to submit mandatory reporting of entity and vehicle information to CARB.

through December 31, 2023. Beginning January 1, 2024, drayage trucks newly registered in TRUCRS must be ZEVs. Starting in 2035, all drayage trucks entering seaports and intermodal railyards must be ZEVs. Legacy drayage trucks can remain in drayage service for a minimum period of time, defined as the later of the following two conditions:

- Thirteen years from the model year that the engine and emissions control systems are first certified by CARB or EPA; or

- When the vehicle exceeds 800,000 vehicle miles traveled or 18 years from the model year that the engine and emissions control systems are first certified by CARB or EPA, whichever is earlier.

C. High-Priority and Federal Fleets

The HPF fleet requirements apply to the following specified entities that own, operate, or direct the operation of of one or more affected vehicles in California on or after January 1, 2024:[21]

- Entities with $50 million or more in total gross annual revenue in the immediately preceding calendar year.

- Fleets that own, operate, or direct the operation of 50 or more affected vehicles, excepting light-duty package delivery vehicles.

- Fleet owners or controlling parties whose fleets, in combination with other fleets, total 50 or more affected vehicles, excepting light-duty package delivery vehicles.

- Federal government agencies.

D. High Priority and Federal and State and Local Government Fleet Compliance Options

Starting January 1, 2024, both HPF and SLG fleet owners must comply with the default Model Year Schedule or the the ZEV Purchase Schedule, respectively. Either may alternately elect to comply with the ZEV Milestones Schedule Option. Both the Model Year Schedule and the ZEV Milestones Option achieve substantial emission reductions, and both options will ensure that HPF and SLG fleets can achieve fleetwide conversion of their vehicles to ZEVs by 2042.

[21] SLG fleets that opt-in to the ZEV Milestones Option are subject to the HPF fleet requirements established in Section 2015(a)(1)(D).

1. Model Year Schedule

To comply with the Model Year Schedule, beginning January 1, 2024, all additions to the fleet must be ZEVs or NZEVs, and all ICE vehicles must be removed from the California fleet at the end of designated periods.[22]

2. ZEV Milestones Option

Until January 1, 2030, instead of complying with the Model Year Schedule, fleet owners may elect to instead comply with the ZEV Milestones Option, which specifies minimum ZEV targets for different categories of vehicles as a percentage of their California fleet. This option allows for phasing ZEVs[23] into the fleet between 2025 and 2042, starting with vehicle types that are most suitable for electrification. Fleet owners must report if they have elected to comply with the ZEV Milestones option. Yard tractors or trucks are included in Group 1 as shown below in Table 2. Under this option, fleet owners may continue to deploy ICE vehicles as long as they meet their fleetwide ZEV percentages based on the schedule laid out in Table 2.

Table 2- ZEV Fleet Milestone Schedule

Group	Percentage of Fleet that Must be ZEVs	10%	25%	50%	75%	100%
1	Box trucks, vans, two-axle buses, yard trucks/tractors, light-duty delivery vehicles	2025	2028	2031	2033	2035
2	Work trucks, day cab tractors, three-axle buses	2027	2030	2033	2036	2039
3	Sleeper cab tractors and specialty vehicles	2030	2033	2036	2039	2042

E. Exemptions and Compliance Flexibilities

The ACF Regulation is phased in over two decades, and includes exemptions and compliance flexibilities that will enable fleets to comply with the ACF regulation even if they experience circumstances beyond their control. A complete list of all regulatory

[22] Specifically, the designated period specified in Cal. Code Regs. title 13, sections 2014 and 2015(b). "Minimum useful life" means the minimum time period a vehicle may remain in the California fleet. It is the later of the dates specified in subsection (A) or (B) below, as modified by subsection (C): (A) Thirteen years commencing from the model year that the engine and emissions control system in a vehicle was first certified for use by CARB or United States Environmental Protection Agency (U.S. EPA); or (B) The date that the vehicle exceeded 800,000 vehicle miles traveled or 18 years from the model year that the engine and emissions control system of that vehicle was first certified for use by CARB or U.S. EPA (whichever is earlier). (C) If the vehicle no longer has its originally equipped engine, or the model year of the originally equipped engine is not able to be determined, the model year of the vehicle less one year must be used to determine when the thresholds described in subsections (A) and (B) above are met.

[23] NZEVs count as ZEVs until 2035 model year.

exemptions and extensions is provided in Table 3 below, while a subset of the exemptions and extensions are discussed in greater detail below.

1. ZEV Purchase and Daily Use Exemptions

These exemptions apply to HPF and SLG fleets. The ZEV Purchase Exemption allows a fleet owner to purchase a new ICE vehicle of the same configuration as the ICE vehicle being replaced, if the needed vehicle configuration is not available as a ZEV or a NZEV.

The Daily Usage Exemption allows fleets to request permission to purchase an ICE vehicle if the needed vehicle configuration is available as a battery electric vehicle (BEV), but the BEV operating range does not meet the fleet's operational needs and if no NZEVs or hydrogen fuel cell electric vehicles (FCEVs)[24] are available in the needed vehicle configuration.[25]

SLG fleets can apply for the ZEV Purchase and Daily Use Exemptions no earlier than when the model year of the ICE vehicle being replaced reaches 13 years old. HPF fleets can apply for this extension no earlier than when the model year of the ICE vehicle being replaced reaches 16 years old, or when the vehicle reaches 700,000 miles, whichever occurs first.

2. Non-Repairable Vehicle, Vehicle Delivery Delay and ZEV Infrastructure Extensions

The Non-Repairable Vehicle Extension applies to all fleets. In the event a vehicle is damaged in an accident, fleet owners can purchase a used ICE vehicle with the same or newer model year engine as the non-repairable vehicle without affecting the compliance date. Also, if a HPF, a SLG opting into the ZEV Milestones Option, or drayage fleet owner orders a ZEV one year ahead of the compliance date, and the ZEV is delivered by the manufacturer after the compliance date, then the HPF, the SLG opting into the ZEV Milestones Option, or the drayage truck fleet owner may use the Vehicle Delivery Delay Extension to continue using their ICE vehicle and remain in compliance until the ZEV is delivered. This extension is not relevant for HPF fleets who have not opted into the ZEV Milestone Option.

The ZEV Infrastructure Delay Extension allows any fleet owner to continue to use ICE vehicles and stay in compliance for the portion of their fleet that is impacted by a qualifying delay in installing ZEV charging or fueling infrastructure that is beyond the

[24] Hydrogen fuel-cell electric vehicle" or "FCEV" means a vehicle with an electric motor where energy for the motor is supplied by an electrochemical cell that produces electricity via the non-combustion reaction of hydrogen.

[25] Starting in 2024, any new ICE vehicle, that is added to the California fleet must have an engine certified to applicable California emissions standards, and any used ICE vehicle added to the California fleet must have a 2010 through 2023 model year engine.

control of the fleet owner, provided the project was started one year before the next applicable compliance date for the affected vehicles needing to be replaced.

3. Backup Vehicle, Waste and Wastewater, and Other Extensions

The following exemptions and extensions apply to HPF and SLG fleets. The Backup Vehicle Exemption allows fleet owners to exclude vehicles from compliance requirements for designated backup vehicles that operate less than 1,000 miles per year.

The Waste and Wastewater Extension only applies to existing CNG-fueled trucks owned by waste hauler fleets or wastewater agencies that process or handle organic waste. This extension allows fleets who have opted into ZEV Milestone Schedule to shift the compliance deadline for existing CNG vehicles in groups 1 and 2 to group 3, giving them until 2030 to start purchasing ZEVs.

A Mutual Aid Assistance exemption allows SLG and HPF fleets who have already established agreements to provide mutual aid[26] during declared emergency events to other entities, to keep existing and/or add new ICE vehicles in their fleets. This portion of their fleet remains exempt from ZEV purchase mandates, but does not apply to pickup trucks, buses, box trucks, vans, tractors, vehicles available as ZEVs with fast mobile fueling/charging, or NZEVs.

Table 3 – Summary of Exemptions and Extensions

Exemption or Extension	Applicable Fleet Regulation	Summary of Compliance Flexibility
Infrastructure Delay Extension	SLG, Drayage, HPF	Up to five year extensions are available to accommodate delays in installing infrastructure due to circumstances outside a fleet owners control. The site electrification delay provides up to a five year extension for delays in obtaining grid power from a utility before construction starts. The site electrification delay can extend up to five years from the time a utility and fleet either execute a contract or the utility attests they will proceed with obtaining enough power to the site; this extension sunsets in 2030.

[26] "Mutual Aid" means voluntary aid and assistance by the provision of services and facilities, including but not limited to: fire, police, medical and health, communication, transportation, and utilities. Mutual aid is intended to provide adequate resources, facilities, and other support to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. Cal. Code Regs., title 19, § 2415.

Exemption or Extension	Applicable Fleet Regulation	Summary of Compliance Flexibility
		Fleet owners with multiple sites must provide each site's preliminary infrastructure capacity evaluation from the utility or a third-party licensed professional electrical engineer to qualify. Construction related delays can be approved for up to two years after a ZEV infrastructure construction permit is issued. This would provide for up to three-years from the time a construction permit is obtained.
ZEV Purchase Exemption*	SLG, HPF	Allows fleets to purchase a new ICE vehicle when ZEVs are not available in the needed configuration. The first path requires CARB to maintain a list of vehicle body configurations not available as ZEVs. Fleets may purchase an ICE vehicle type on CARB's list without applying for an exemption. Under the second path, fleet owners can apply for an exemption if they can prove a needed vehicle configuration was not available to serve the primary function for a particular fleet. Excludes yard tractors, and complete vehicles already available as ZEVs such as: pickups, buses, box trucks, vans, and tractors.
Daily Usage Exemption*	SLG, HPF	Allows fleets to purchase a new ICE vehicle if available ZEVs cannot meet duty cycle for the same truck configuration. The fleet must already be composed of 10 percent ZEVs to qualify. Fleets will have up to 180 days to make new ICE purchases when approved. Yard tractors are ineligible for this exemption.
Mutual Aid Assistance	SLG, HPF	Allows for purchase of ICE vehicles after meeting a minimum threshold of ZEVs in the fleet. The minimum threshold is a gradual phase-in to 75 percent ZEV over nine years, beginning at 25 percent in 2024 and increasing to 75 percent by 2035. Excludes pickup trucks, buses, box trucks, vans,

Exemption or Extension	Applicable Fleet Regulation	Summary of Compliance Flexibility
		tractors, vehicles available as ZEVs with fast mobile fueling/charging, or NZEVs.
Waste and Wastewater Fleet Option	HPF Milestones, SLG opt-in	Applies to existing CNG trucks owned by waste hauler fleets or wastewater agencies that process or handle organic waste. Allows fleets that have opted into ZEV Milestones to shift compliance deadline for Groups 1 and 2 CNG vehicles to Group 3, giving them until 2030 to start their transition. Excludes yard tractors.
Vehicle Delivery Delay Extension	HPF, Drayage	Applies to ZEV orders cancelled by an original equipment manufacturer (OEM).The extension allows the fleet owner to remain in compliance if a ZEV is ordered one year ahead of the compliance date and the ZEV is not received until after the compliance date. The extension allows the vehicle that is scheduled to be replaced to continue operating in the California fleet until the replacement ZEV is received. Until 2035, this extension also applies to near-zero emission vehicle purchase This delay allows HPF and drayage fleets 180 days to secure another ZEV purchase agreement.Applies to yard tractors.
5-Day Pass	HPF	A HPF fleet owner can bring a non-compliant vehicle into California for no more than five consecutive days once annually without subjecting that vehicle to the HPF fleet requirements.
Accident/Non-repairable Vehicle Provision	HPF Model Year, Drayage, SLG	In the case of an accident, this provision allows a fleet owner to purchase and use, on a limited basis, an ICE vehicle with the same or newer model year engine as the damaged and non-repairable vehicle.
Intermittent Snow Removal Vehicle Exemption	SLG, HPF Milestones	A multi-use ICE vehicle that periodically removes snow from roads may be designated as an intermittent snow removal vehicle.

Exemption or Extension	Applicable Fleet Regulation	Summary of Compliance Flexibility
		These vehicles are excluded from the California fleet and exempt from ZEV purchases until 2030. Excludes yard tractors.
Backup Vehicle	SLG, HPF	Fleet owners may purchase a new or used ICE vehicle and exclude it from the ZEV purchase requirements if it is accrues less than 1,000 miles annually, also excluding miles accrued in service of mutual aid events. Excludes yard tractors.
Emergency Event	HPF	Fleet owners may exclude vehicles that are performing emergency operations from the Model Year Schedule during declared emergency events.

* Exemption allows the fleet owner to purchase a new California-certified ICE vehicle rather than a ZEV if their application is granted by the Executive Officer.

F. Reporting and Recordkeeping Requirements

Fleet reporting is mandatory for all affected fleets. Drayage truck owners must report information about their existing trucks no later than December 31, 2023, to establish their legacy drayage truck fleet. HPF fleets must report information about their existing trucks by February 1, 2024, to establish the vehicles that will be part of their legacy California fleet. SLG fleets must report information about their existing trucks starting April 1, 2024.

All fleets need to report specified information to CARB that identifies both the fleets themselves, including fleet contact information, identification if the fleet is a federal or SLG fleet, and if the fleet has elected to comply with the ZEV Milestones option. Fleets must also report specified information for the affected vehicles in their fleets, including vehicle identification numbers, makes and models, body types, fuel and powertrain type, dates of vehicle purchases and dates the vehicles were added or removed from the fleets' California fleets. All regulated fleets must report to qualify for exemptions if applicable and when vehicles are added or removed from the fleet. Fleet owners must also keep records of information used to demonstrate compliance.

G. Hiring Compliant Fleets

For each calendar year, hiring entities[27] must verify that each fleet it hires or dispatches to operate in California is listed on the CARB Advanced Clean Fleets webpage as a compliant fleet. Alternatively, for each calendar year that an entity hires a fleet to operate in California that is not listed on the CARB Advanced Clean Fleets webpage as a compliant fleet, it must obtain a signed statement from the fleet owner stating their fleet is not subject to the ACF regulation. SLG and HPF fleet owners must also disclose the Regulation's applicability to potential buyers when selling vehicles. Finally, there are separate recordkeeping requirements for hiring entities.

H. 100 Percent Zero-Emission Vehicle Sales by 2036

This element of the ACF regulation requires manufacturers to only produce and deliver for sale in California on-road medium- and heavy-duty vehicles that are ZEVs, beginning in the 2036 model year.[28] ZEVs over 14,000 lbs. GVWR and incomplete medium-duty ZEVs from 8,501 through 14,000 lbs. GVWR must meet the requirements of the ZEP Certification regulation. Manufacturers must also report to CARB the vehicle identification numbers and fuel and drivetrain types for each vehicle. If a vehicle is not a ZEV, the manufacturer must provide documentation that the vehicle is an authorized emergency vehicle.

IV. WAIVER CRITERIA AND PRINCIPLES

A. Criteria for Granting Waivers of Preemption Under CAA Section 209(b) and Authorizations Under CAA Section 209(e)

Section 209(a) of the CAA provides:

> No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or any new motor vehicle engines subject to this part. No State shall require certification, inspection, or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.

Section 209(b) of the CAA sets forth the protocol for granting California[29] a waiver from the preemption of section 209(a). Under section 209(b), the Administrator must grant a

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[27] A "hiring entity" is any motor carrier, broker, governmental agency, person, or entity that hires and operates or hires and directs the operation of vehicles in California that are subject to the ACF regulation.

[28] Authorized emergency vehicles are exempted from this requirement.

[29] CAA section 209(b) provides for granting a waiver to "any State that has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966." California is the only State that meets this eligibility criterion. *See, e.g.*, S. Rep. No. 90-403, at 632 (1967) and *Motor and Equipment Manufacturers Association v. EPA (MEMA I)*) 627 F.2d 1095, 1101 fn. 1 (D.C. Cir. 1979).

waiver to California if the state has determined that its standards will be, in the aggregate, at least as protective of public health and welfare as applicable federal standards, unless the Administrator finds that (1) the state's protectiveness determination is arbitrary and capricious, (2) California does not need a state program to meet compelling and extraordinary conditions, or (3) the state's program and accompanying enforcement procedures are not consistent with section 202(a) of the CAA.

Section 209(e)(2) of the CAA sets forth the protocol for the Administrator to grant California an authorization to adopt and enforce standards and other requirements relating to controlling emissions from new and in-use nonroad engines that are not conclusively preempted by section 209(e)(1)—new engines less than 175 horsepower (hp) used in farm and construction equipment and vehicles and new engines used in new locomotives and locomotive engines.

Closely tracking the new motor vehicle waiver process, section 209(e)(2) directs the Administrator to grant an authorization to California for emissions standards and other requirements for all other nonroad engines if California determines that the state's standards will be, in the aggregate, at least as protective of public health and welfare as applicable federal standards, unless the Administrator finds that: (1) the protectiveness finding of the state is arbitrary and capricious; (2) California does not need a separate state program to meet compelling and extraordinary conditions; or (3) the state program and accompanying enforcement procedures are not consistent with section 209 of the CAA.[30] The criteria for reviewing a California request for authorization under section 209(e)(2) are nearly identical to the criteria that the Administrator must consider under section 209(b). In light of these nearly identical protocols, EPA has confirmed that it would similarly interpret sections 209(b) and (e) where the language is similar.[31]

One deviation in language between sections 209(b) and 209(e)(2) is that CAA section 209(e)(2) requires the Administrator to consider consistency with "this section"—i.e., section 209—rather than 202(a). EPA interpreted this provision to require that California's standards and accompanying enforcement provisions must be consistent with sections 209(a), 209(b)(1)(C), and 209(e)(1).[32] As the Administrator has stated:

> "In [o]rder to be consistent with section 209(a), California's [nonroad] standards and enforcement procedures must not apply to new motor vehicles or new motor vehicle engines. Secondly, California's nonroad standards and enforcement procedures must be consistent with section 209(e)(1), which identifies the categories permanently preempted from state regulation. California's nonroad standards and enforcement

[30] 82 Fed. Reg. 6525, 6256 (Jan. 19, 2017).

[31] *Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards (Final 209(e) Rule)*, 59 Fed. Reg. 36969 (July 20, 1994), Decision Document accompanying 60 Fed. Reg. 37440 (July 20, 1995) at p. 11; 65 Fed. Reg. 69763, 69764 (Nov. 20, 2000).

[32] 59 Fed. Reg. 36969, 36983 (July 20, 1994).

> procedures would be considered inconsistent with section 209 if they applied to the categories of engines or vehicles identified and preempted from State regulation in section 209(e)(1). Finally, and most importantly in terms of application to nonroad [authorization requests], California's nonroad standards and enforcement procedures must be consistent with section 209(b)(1)(C). EPA will review nonroad authorization requests under the same "consistency" criteria that are applied to motor vehicle waiver requests. Under section 209(b)(1)(C), the Administrator shall not grant California's motor vehicle waiver if she finds that California 'standards and accompanying enforcement procedures are not consistent with section 202(a)' of the [CAA]…."[33]

B. Principles Followed in Granting CAA Section 209(b) Waivers and 209(e) Authorizations

1. The Burden Is on the Opponents Challenging the Request

In considering a waiver or authorization request, California is presumed to have satisfied the criteria for granting a waiver or authorization, and the burden to show otherwise is on those persons challenging the request.[34] The statutory text makes this clear by identifying only factual criteria for denial and by phrasing those criteria in the negative. Thus, the waiver or authorization "shall" be granted unless the record supports one of the identified factual findings. California would never reasonably be expected to make a showing as to any of the criteria for denial—e.g., that its protectiveness determination is arbitrary, that it does not needs its program, or that its program is somehow infeasble. Hence, the text makes clear that the burden is on opponents to prove that one or more of the criteria for a denial is met. This has long been EPA's approach,[35] and that approach has been upheld by the D.C. Circuit and ratified by Congress.[36]

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[33] 65 Fed. Reg. 69763, 69764 fn. 5 (Nov. 20, 2000).

[34] *MEMA I*, 627 F.2d 1095, 1121.

[35] See e.g., 36 Fed. Reg. 17,458-17,459 (Aug. 31, 1971); 40 Fed. Reg. 23,102, 23,103 (May 28, 1975); Decision Document accompanying 61 Fed. Reg. 53371 at p. 15-16.

[36] *MEMA I*, 627 F.2d 1095, 1121. When Congress amended Section 209(b)(1) in 1977 to expand California's discretion, it expressly approved EPA's application of the waiver provision. H.R. Rep. No. 95-294, at 301 (1977). Then, in 1990, Congress further ratified EPA's approach to Section 209(b)(1) by re-enacting virtually identical text in Section 209(e)(2).

Given the identical structure and near identical language of sections 209(b) and 209(e)(2), the opponents of an authorization request bear a similar burden of proof when arguing that authorization should be denied.[37]

2. The Scope of the Waiver/Authorization Proceeding Is Limited

The scope of the Administrator's inquiry in considering a waiver or authorization request is limited by the express terms of CAA sections 209(b)(1) and (b)(2) and (e)(2)(A). Once California determines that its standards are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, the Administrator must grant the waiver or authorization unless one of the three specified findings can be made.

This reading of the statute is consistent with the decision in *MEMA I* and prior EPA waiver decisions interpreting CAA section 209(b), which recognize that the review of California's decision to adopt separate standards is a narrow one.[38] In granting the waiver for the On-Board Diagnostics (OBD) II regulation in 1996, Administrator Carol Browner concluded that she must grant a waiver if she could not find sufficient evidence in the record to support any of the criteria that would allow a denial.[39] Much earlier Administrator William D. Ruckleshaus stated:

> The law makes it clear that the waiver request cannot be denied unless the specific findings designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209 . . . . [40]

3. Deference Must Be Accorded to California's Policy Judgments

In granting waivers to California's new motor vehicle program, EPA has repeatedly and routinely deferred to the policy judgments of California's decision-makers. EPA has recognized that the intent of Congress in creating a limited review of California's waiver

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[37] See, e.g., Decision Document accompanying 60 Fed. Reg. 37440 (July 20, 1995) at p. 14; Decision Document accompanying 61 Fed. Reg. 69093 (Dec. 31, 1996) at pp. 16-17; 76 Fed. Reg. 77521, 775223 (Dec. 13, 2011); 82 Fed. Reg. 6525, 6528 (Jan. 19, 2017).

[38] *See* 40 Fed. Reg. 23102, 23103 (May 28, 1975).

[39] 61 Fed. Reg. 53371 (Oct. 11, 1996); *Motor & Equip. Mfrs Ass'n v. Nichols*, ("MEMA II") 142 F.3d 449 (D.C. Cir. 1998).

[40] 36 Fed. Reg. 17158 (Aug. 31, 1971). See also 40 Fed. Reg. 23102, 23104; Decision Document accompanying 58 Fed. Reg. 4166 (Jan. 7, 1993) at pp. 20-21; 74 Fed. Reg. 32744, 32748 (July 8, 2009).

requests was to ensure that the federal government did not second-guess the wisdom of state policy.[41] Administrators have recognized that the deference is wide-ranging:

> The structure and history of the California waiver provision clearly indicate both a Congressional intent and an EPA practice of leaving the decision on ambiguous and controversial matters of public policy to California's judgment.
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> * * * * * *
>
> It is worth noting . . . I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to "catch up" to some degree with newly promulgated standards. Such an approach . . . may be attended with costs … and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency under the statutory scheme outlined above, I believe *I am required to give very substantial deference to California's judgments on this score.*[42]

By authorizing California to adopt its own emission standards for nonroad vehicles and engines, and by establishing almost identical requirements for EPA review of authorizing requests under section 209(e)(2) as it requires for waiver decisions under section 209(b), Congress unmistakably intended that the EPA accord similar deference to California's decisions under 209(e)(2).[43]

C. CARB Is Requesting a Waiver for the Drayage and the HPF Fleet Elements of the ACF Regulation, Even Though These Elements Could Constitute Fleet Composition Requirements

Clean Air Act section 209(d) states that CAA section 209(a) does not preempt the authority of states to "control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles."[44] Because the drayage elements of the ACF

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[41] See, e.g., 74 Fed. Reg. 32744, 32748 (July 8, 2009).

[42] 40 Fed. Reg. 23102, 23104 (emphasis added). See also Decision Document accompanying 58 Fed. Reg. 4166 (Jan. 17, 1993) at p. 64.

[43] *See* discussion in *Engine Manufacturers Association v. U.S. EPA (EMA)*, 88 F.3d 1075, 1090 (D.C. Cir. 1996), wherein the court recognized California's leadership in emission control regulation in both new motor vehicles and new and in-use nonroad engines.

[44] 42 U.S.C. § 7543(d).

regulation only apply in connection with certain localities (California seaports or intermodal railyard properties) and to vehicles engaged in certain operations (transporting cargo, such as containerized, bulk, or break-bulk goods), it does not, on its face, require operators to purchase (and thus manufacturers to produce) specific vehicles. Rather, at least on their face, the drayage elements could be met by shifting vehicles within a fleet so that qualifying vehicles are used in the relevant localities and for the relevant operations. This element of the ACF regulation thus controls the types of vehicles that may be operated in particular locations in California and are thus somewhat analogous to in-use regulations that control the types of vehicles permitted in or restricted from carpool lanes or downtown areas.[45] There is therefore a threshold question whether this element is preempted by CAA section 209(a) such that a waiver would be required. Similarly, the HPF element does not, on its face, require fleet owners/operators to purchase particular *new* motor vehicles. Rather, this element simply requires that fleet owners/operators add ZEVs to their fleets, and does not preclude such ZEVs from being used ZEVs. There is therefore a similar question about whether this element is preempted and must be included in a waiver in order to be enforceable.

Moreover, to the extent a state law regulates only post-sale vehicles, it is not preempted by section 209(a).[46] As previously stated, some regulated fleet owners and operators may be able to comply with the drayage or HPF fleet requirements by solely making post-new vehicle sale changes, for instance, by converting existing internal combustion engine powered vehicles to ZEVs or NZEVs, or by purchasing used ZEVs or NZEVs from other fleet operators. These elements of the AF regulation accordingly share some characteristics with state laws that are not preempted by Section 209(a) because they comprise operational controls of in-use on-road motor vehicles within the state's Section 209(d) authority.

However, CARB is aware that under current industry conditions, it is unlikely that there will be sufficient numbers of either used ZEVs or NZEVs or engine or vehicle conversion kits to enable drayage and HPF fleets to comply with applicable fleet requirements solely by utilizing post-new vehicle sales, or by shifting vehicles within fleets, especially in the first few years of the ACF regulation's implementation. CARB is therefore requesting a waiver for the elements of the ACF regulation that require drayage and HPF fleets to acquire (and therefore manufacturers to produce) new vehicles with particular emission-control features (ZEVs and NZEVs), despite the protections CAA

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[45] *Engine Mfrs. Ass'n v. U.S. EPA*, 88 F.3d 1075, 1094 (D.C. Cir. 1996) ("[T]he longstanding scheme of motor vehicle emissions control has always permitted the states to adopt in-use regulations—such as carpool lanes, restrictions on car use in downtown areas, and programs to control extended idling of vehicles—that are expressly intended to control emissions."); *see also Allway Taxi, Inc.*, 340 F. Supp. at 1124 ("[C]ongress specifically refused to interfere with local regulation of the use or movement of motor vehicles after they have reached their ultimate purchasers.").

[46] *Sims v. State of Fla., Dep't of Highway Safety & Motor Vehicles*, 862 F.2d 1449, 1453, 1455 (11th Cir. 1989) (explaining that Section 209(a) "indicates Congress's intent to exclusively regulate the control of new motor vehicle emissions prior to their initial sale"); *see also In re Volkswagen*, 959 F.3d at 1215–16 (defining a "new motor vehicle" in the Clean Air Act as "a pre-sale vehicle").

section 209(d) provides for California and other states to impose in-use fleet composition requirements. As demonstrated below in Section V, EPA has no basis to deny the requested waiver because these elements of the ACF regulation satisfy the criteria of CAA section 209(b).[47]

V. THE ADVANCED CLEAN FLEETS REGULATION MEETS THE CRITERIA FOR A NEW WAIVER

CARB submits that for the reasons set forth below, and in the documents associated with the Advanced Clean Fleets regulation's rulemaking action, the Administrator must grant California a new waiver, as the Administrator has no basis under the criteria of CAA section 209(b) to deny California's request.

A. Protectiveness

In reviewing CARB's protectiveness determination, EPA traditionally evaluates the stringency of California's newly adopted or amended emissions standards to comparable EPA emission standards, and that comparison has been undertaken in the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA has previously determined were not arbitrary and capricious.[48]

EPA's evaluation tracks the two discussions of protectiveness in the text of section 209(b). Specifically, section 209(b)(2) states: "[i]f each State standard is at least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of [209(b)(1)]." EPA properly considers the individual standards in a given waiver request under Section 209(b)(2) because that text provides that determination as one path to satisfying the protectiveness criterion.

But the statute does not require each state standard to be at least as stringent as any comparable federal standard because section 209(b)(1) requires EPA to deferentially review California's "determin[ation] that the State standards will be, *in the aggregate,* at least as protective of public health and welfare as applicable Federal standards."[49]

Thus, in addition to the inquiry under Section 209(b)(2), EPA also considers whether California's standards as a whole program are *collectively* at least as protective as federal standards—an inquiry under which EPA considers whether the standards in the waiver request could somehow undermine the protectiveness of the whole program of

[47] Regardless of whether section 209(d) preserves CARB's ability to enforce the elements of the ACF regulation establishing vehicle purchase requirements for drayage and HPF fleets without a waiver, the vehicle purchase requirements for state and local governmental fleets are not preempted by section 209(a) and do not require a waiver. See footnote 17, supra. .

[48] 74 Fed. Reg. 32744, 32749 (July 8, 2009); 70 Fed. Reg. 50322 (Aug. 26, 2005); 77 Fed. Reg. 9239 (Feb. 16, 2012).

[49] 42 U.S.C. § 7543(b)(1).

existing California standards for which EPA has already granted a waiver.[50] In so doing, EPA considers whether the entire California new motor vehicle emissions program - including the standards for which the waiver is requested—is at least as protective as the federal program.[51]

Congress directed that EPA review California's protectiveness determination under the deferential arbitrary and capricious standard. EPA has correctly understood that this would require " 'clear and compelling evidence'" [52] to show that the changes to California's program undermine the relative protectiveness of California's standards in the aggregate.

As described in Section III of this document, the ACF regulation establishes emissions standards and other requirements that are significantly more stringent than corresponding federal requirements. The Administrator therefore has no basis to deny this waiver request under the protectiveness criterion—under either the analysis undertaken pursuant to section 209(b)(2) or the aggregate analysis undertaken pursuant to section 209(b)(1).

In adopting the ACF regulation, the Board approved Resolution 23-13 (Enclosure 16), in which it expressly declared:

> Be it further resolved that the Board hereby determines that the regulations adopted herein will not cause California's motor vehicle or off-road engine emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.

The Administrator has no basis to find that the Board's determination is arbitrary or capricious. The emissions standards and other emission-related requirements established by the ACF regulation are clearly more stringent than any applicable federal requirements, *because there are no comparable federal requirements for fleets to acquire, or for manufacturers to produce, zero emission motor vehicles*.[53,54]

On April 27, 2023, EPA proposed the adoption of a rulemaking action entitled "the Greenhouse Gas (GHG) Emissions Standards for Heavy-Duty Vehicles Phase 3"

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[50] 44 Fed. Reg. 38,660 38,661 (July 2, 1979) ("[T]he public record did not contain any evidence that this regulation would cause the California standards, in the aggregate, to be less protective of public health and welfare than the applicable Federal standards.").

[51] 74 Fed. Reg. 32,744, 32,749 (July 8, 2009).

[52] 74 Fed. Reg. 32744, 32749 (July 8, 2009)*; MEMA I*, 627 F.2d 1095, 1122.

[53] "Indeed, California standards may be most clearly 'at least as protective' when they are compared to the absence of Federal emission standards." 74 Fed. Reg. 32744, 32755 (July 8, 2009).

[54] As described in footnote 1, one element of the ACF regulation applies to light-duty vehicles used to deliver mail and packages. The emissions standards and accompanying enforcement procedures associated with this element of the regulation were established by CARB in the Advanced Clean Cars II Regulation, and are consequently that element of the ACF regulation is not included in this waiver and authorization request.

(hereinafter Phase 3 GHG regulation) that, in pertinent part, proposed more stringent carbon dioxide (CO2) emission standards for model years (MY) 2027 through 2032 heavy-duty vehicles, and requested comment on including additional new standards with increasing stringency for 2033 through 2035 model year heavy-duty vehicles.[55] EPA projected that manufacturers might elect to comply with the proposed Phase 3 GHG regulation by incorporating zero emission technologies into the affected vehicles, and estimated that the manufacturer adoption rates of ZEV technologies would range from 25 percent for sleeper cab tractors to 35 to 57 percent for light-heavy duty, medium heavy-duty, and heavy heavy-duty vocational trucks in model year 2032, but also expressly stated that the Phase 3 GHG regulation "do[es] not mandate the use of a specific technology, and EPA anticipates that a compliant fleet under the proposed standards would include a diverse range of technologies (*e.g.,* transmission technologies, aerodynamic improvements, engine technologies, battery electric powertrains, hydrogen fuel cell powertrains, etc.)[56]

EPA's proposed adoption of the Phase 3 GHG regulation does not affect the Board's protectiveness determination. EPA has not yet finalized that regulation, and moreover, even if the proposed regulation was finalized as proposed in the NPRM, those emission standards would not require ZEV deployment in heavy-duty vehicles, much less at the levels presently required by CARB's Advanced Clean Truck (ACT) regulation.[57] The ACT regulation requires manufacturers to produce and deliver for sale in California increasing numbers of new medium- and heavy-duty ZEVs starting with the 2024 model year.[58] In granting California a waiver for the ACT regulation, EPA determined it could not find that CARB was arbitrary and capricious in finding that California's standards are, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.[59]

Furthermore, as described above, the ACF regulation accelerates the widespread adoption of ZEVs in California's medium- and heavy-duty vehicle sector beyond the ZEV adoption rates required by the ACT regulation, and notably requires that manufacturers must only produce and deliver for sale in California ZEV medium- and heavy-duty vehicles commencing with the 2036 model year.[60] CARB projects that the ACF regulation will significantly increase the number of medium-duty and heavy-duty ZEVs in California beyond the ZEV sales attributable to the ACT regulation by

[55] 88 Fed. Reg. 25926 (Apr. 27, 2023).

[56] 88 Fed. Reg. 25929 (Apr. 27, 2023).

[57] The ACT regulation is set forth in California Code of Regulations, title 13, sections 1963, 1963.1, 1963.2, 1963.3, 1963.4, 1963.5, 2012, 2012.1, and 2012.2.

[58] The ACT regulation requires manufacturers to produce and deliver for sale in California at least 60 percent of their class 4 to 8 trucks, and 40 percent of their Class 7 and 8 tractors as ZEVs in model year 2032. Cal. Code Regs., tit. 13, section 1963.1.

[59] 88 Fed. Reg. 20968.

[60] Authorized emergency vehicles are exempted from this requirement.

approximately 190,000 ZEVs in 2035, 450,000 ZEVs in 2045, and 640,000 ZEVs in 2050.[61] And because they emit no tailpipe pollution of any kind, the use of ZEVs reduces vehicular emissions of multiple pollutants. It is therefore evident that the ACF regulation will not render California's new motor vehicle emission emissions standards, in the aggregate, less protective of public health and welfare as applicable federal standards. Rather, the addition of the ACF regulation *enhances* the already sufficient level of protectiveness provided by California's program.

For the foregoing reasons, it is clear that CARB's determination of the protectiveness of its program, in light of the addition of the ACF regulation, is well founded, as the foregoing discussion demonstrates that the ACF regulation establishes emissions standards that are at least as stringent comparable applicable Federal standards under CAA section 209(b)(2), and that the ACF regulation will also not cause California's motor vehicle emissions standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards under CAA section 209(b)(1).

B. Compelling and Extraordinary Circumstances

The Administrator has consistently recognized that California satisfies the second criterion for waivers and authorizations—that the State has "compelling and extraordinary conditions" and therefore continues to need its own new motor vehicle and new motor vehicle engine program and its nonroad engine and equipment emissions control program. As demonstrated below, under either EPA's traditional interpretation of this criterion, or under an alternative interpretation of the criterion that considers California's need for particular standards, EPA has no basis to deny this authorization request under this criterion.

1. Traditional Interpretation of Compelling and Extraordinary Criterion

EPA has traditionally interpreted CAA sections 209(b)(1)(B) and 209(e)(2)(A)(ii) as requiring an inquiry regarding California's need for separate new motor vehicle and nonroad engine and equipment emissions control programs, respectively, to meet compelling and extraordinary conditions, and not whether any given standard is necessary to meet such conditions.[62] EPA has expressed this as an inquiry into "the existence of 'compelling and extraordinary' conditions'" of the kind for which a separate state program of controls remains warranted.[63] In other words, "review … under section

[61] CARB, Staff Report: Initial Statement of Reasons, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation (2022), Executive Summary, Section C. Staff Report available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf.

[62] 87 Fed. Reg. at 35,767; 80 Fed. Reg. at 76,689.

[63] 40 Fed. Reg. at 23,103; see also *id.* at 23,104 (concluding "[c]ompelling and extraordinary conditions continue to exist in the State of California"). See also 41 Fed. Reg. 44,209 44,210 (Oct. 7, 1976) ("[T]he question of whether *these particular standards* are actually required by California all fall within the broad area of public policy [left to] California's judgment … consistent with the Congressional intent behind the California waiver provision.").

209(b)(1)(B) is not based on whether California has demonstrated a need for the particular regulations, but upon whether California needs standards to meet compelling and extraordinary conditions."[64,65]

In adopting Resolution 23-13, CARB found that "[d]espite California's progress in reducing emissions from mobile sources, stationary sources, and area sources, California still has the most severe air pollution problems",[66] and that CARB must continue to seek to reduce emissions reductions from all sources under its authority to, in pertinent part, meet federal and state ambient air quality standards and address the harms resulting from climate change,[67] and to "support California's statewide and regional attainment of the health-based NAAQS for ozone and PM2.5".[68] It should therefore be noted that the ACF regulation is one of two on-road heavy-duty vehicle measures incorporated in California's 2022 State Strategy for the State Implementation Plan.[69]

California continues to struggle with the severe air pollution conditions that Congress considered "compelling and extraordinary" when it enacted the waiver provision in 1967.[70] The State, particularly in the South Coast and San Joaquin Valley Air Basins, continues to experience some of the worst air quality in the nation. California has six of the ten cities that suffer the worst ozone pollution in the nation, and seven that suffer from the worst particulate pollution in the nation.[71] Over half of California's residents (21 million of nearly 40 million residents) live in areas that exceed the NAAQS 2015 8-hour ozone standard of 70 ppb.[72] The South Coast and San Joaquin Valley Air Basins

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[64] 44 Fed. Reg. at 38,660, 38,661 (July 2, 1979).

[65] The Administrator has recognized that even if such a standard-by-standard test were applied to California, it "would not be applicable to its fullest stringency due to the degree of discretion given to California in dealing with its mobile source pollution problems." 41 Fed. Reg. 44209, 44213, (October 7, 1976); 49 Fed. Reg. 18887, 18892 (May 3, 1984) (finding Congressional intent precludes EPA from viewing adopted California vehicular particulate matter standard in isolation).

[66] Resolution 23-13 at p. 29.

[67] Resolution 23-13 at p. 29.

[68] Resolution 23-13 at p. 30.

[69] CARB, Proposed 2022 State Strategy for the State Implementation Plan" at pp. 34.; Available at: https://ww2.arb.ca.gov/sites/default/files/2022-11/Proposed_2022_State_SIP_Strategy.pdf

[70] *See e.g.*, H.R. Rep. No. 90-728, at 96-97 (1967); S. Rep. No. 90-403, at 33 (1967); *MEMA I*, 627 F.2d at 1110 n.32 ("The intent of the 1977 amendment was to accommodate California's particular concern with oxides of nitrogen, which the State regards as a more serious threat to public health and welfare than carbon monoxide.").

[71] Most Polluted Cities, Am. Lung Ass'n, Most Polluted Cities | State of the Air | American Lung Association, (web link: https://www.lung.org/research/sota/city-rankings/most-polluted-cities, last visited July 14, 2023).

[72] CARB, Proposed 2022 State Strategy for the State Implementation Plan" at pp. 1-2.; Available at: https://ww2.arb.ca.gov/sites/default/files/2022-11/Proposed_2022_State_SIP_Strategy.pdf

remain the only extreme non-attainment areas in the nation for national ambient air quality standards for ozone and remain in serious non-attainment with national ambient air quality standards for particulate matter.[73] In other words, California continues to suffer from the worst air quality in the Nation with respect to these two harmful pollutants,[74] and EPA has always agreed that California needs a separate program to address these compelling and extraordinary conditions.[75]

Californians residing and working outside of those two areas also suffer from exposure to levels of ozone and particulate matter pollution that are too high. This includes, but is not limited to, populations exposed to high levels of pollution because they live, work, study, or play near roadways, railyards, ports, distribution centers and other facilities that are exposed to high levels of mobile source activity.[76] Thus, under EPA's traditional (and proper) interpretation of Section 209(b)(1)(B), there is no basis to deny this waiver request because California continues to face conditions Congress and EPA have already concluded are "compelling and extraordinary" and thus California clearly continues to need a separate program.[77]

2. Alternative Interpretation of the Compelling and Extraordinary Criterion

Even if EPA applies a narrower, standards-specific inquiry (as some waiver opponents may argue is required), the record demonstrates that California "needs" the requirements of the ACF regulation to address California's compelling and extraordinary conditions.

As discussed in Section I, in the Initial Statement of Reasons (ISOR) (Enclosure 2), and as confirmed by CARB's findings in Resolution 23-13 (Enclosure 16), the motor vehicles and off-yard trucks regulated by the ACF regulation are significant sources of harmful air pollutants, especially oxides of nitrogen (NOx), fine particulate matter (PM2.5) and

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[73] 78 Fed. Reg. 2112, 2130 (Jan. 9, 2013); 82 Fed. Reg. 4867, 4871 (Jan. 17, 2017).

[74] See 74 Fed. Reg. 32744, 32762-32763 (July 8, 2009); 79 Fed. Reg. 6584, 6588-590 (Feb. 4, 2014); 82 Fed. Reg 6540, 6543 (Jan. 19, 2017). In 2007, 19 of California's air quality districts were in nonattainment with the eight-hour ozone 0.08 ppm NAAQs. Currently, 37 California counties are in nonattainment with the 2015 eight-hour ozone 0.070 ppm NAAQs, and 26 of California's counties are in nonattainment with the 2006 PM 2.5 NAAQS. https://www3.epa.gov/airquality/greenbook/ancl.html (last accessed July 14, 2023.).

[75] *E.g.*, *Am. Trucking Associations, Inc. v. EPA*, 600 F.3d 624, 628 (D.C. Cir. 2010) (upholding EPA's determination under Section 209(b)(1)(B) based, in part, on the fact that "California continues to suffer from some of the worst air quality in the nation.") (internal quotation marks omitted).

[76] CARB, Staff Report: Initial Statement of Reasons, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation (2022), (ISOR) Executive Summary, Section D, Section II.B, Section IV.B.2,Section IV.F, Section V.C.1, Section VII. Staff Report available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf. ISOR at VIII-1-2; California Air Resources Board, Final Statement of Reasons (Aug. 27, 2020) at 313-14 (FSOR)

[77] *See, e.g.*, 70 Fed. Reg. 50,322, 50,323 (Aug. 26, 2005); 79 Fed. Reg. 46,256, 46,261-62 (Aug. 7, 2014); 82 Fed. Reg. 4867, 4871 (Jan. 17, 2017).

greenhouse gases.[78] The ACF Regulation is projected to cumulatively reduce statewide emissions by approximately 146,872 tons of oxides of nitrogen (NOx), 6,875 tons of fine particulate matter (PM2.5), and 327,000 million metric tons of greenhouse gases (GHGs) from 2024 to 2050.[79]

These emissions reductions will assist California in attaining the national and state ambient air quality standards for ozone and particulate matter, in reducing the serious associated risks to the health and welfare of Californians,[80] and in addressing climate change-induced harms. EPA has consistently found that California "needs" emissions standards to address the compelling and extraordinary conditions resulting from criteria pollutants described above,[81] and has also found that this includes emissions standards that limit emissions of GHGs because of the connection between GHG emissions and the formation of harmful criteria pollution,[82] and therefore has no basis to find that the ACF regulation is not needed under Section 209(b)(1)(B) or 209(e)(2)(A)(iii).

The determination that the ACF regulation satisfies the "compelling and extraordinary" criterion is additionally supported by the fact that, as EPA has repeatedly found,

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[78] ISOR, ES-1, ES-7, Section I-7, Section IV.B.1; Resolution 23-13, p. 29.

[79] CARB, Final Statement of Reasons, pp. 16-17.

[80] NOx emissions pose serious risks to the health and welfare of Californians because they not only include constituents such as nitrogen dioxide that can aggravate lung diseases such as asthma (ISOR, Section IV.A.1, p. 118) they also constitute precursors to ozone and particulate matter (ISOR, (ISOR, Section II.C.(p. 108) that separately pose harms to cardiovascular and respiratory systems (ISOR, Section IV.A.2, p. 119). PM, in particular, poses serious risks to the health of Californians, including respiratory ailments that can increase premature mortality, asthma, chronic heart disease, heart attacks, and increased cancer risks. (ISOR, Section IV.A.2, p. 119). The ACF regulation is expected to reduce the total number of incidents of premature cardiopulmonary mortalities by 2,526, ((FSOR- p. 16), and cardiovascular and respiratory hospitalizations, and emergency room visits between 2024-2050, in an amount equivalent to monetized health benefits of approximately $26.5 billion ((FSOR- p. 16).

[81] 53 Fed. Reg. 7022 (Mar. 4, 1988); 55 Fed. Reg. 43029, 43031 (Oct. 25, 1990); 69 Fed. Reg. 60995 (Oct. 14, 2004); 79 Fed. Reg. 46256, 46261-262 (Aug. 7, 2014); 84 Fed. Reg. 51344, 51346 (Sept. 27, 2019).

[82] "The effects of global concentrations of greenhouse gases can have an impact on local ozone levels." 74 Fed. Reg. 32,744, 32762 (July 8, 2009). "California has made a case that that its greenhouse gas standards are linked to amelioration of California's smog problems. Reducing ozone levels in California cities and agricultural areas is expected to become harder with advancing climate change. … There is a logical link between the local air pollution problem of ozone and California's desire to reduce GHGs as one way to address the adverse impact that climate change may have on local ozone conditions." 74 Fed. Reg. 32763; "To the extent it is appropriate to examine the need for CARB's GHG standards to meet compelling and extraordinary conditions, as EPA discussed at length in its 2009 GHG waiver decision, California does have compelling and extraordinary conditions directly related to regulations of GHG." 78 Fed. Reg. 2112, 2129 (Jan. 9, 2013); "[C]riteria pollutant reductions are demonstrably connected to California's 'need' for its GHG standards and ZEV sales mandate at issue under the waiver. 87 Fed. Reg. 14,332, 14363 (Mar. 14, 2022); "Thus, regardless of how the emissions reductions are attributed, the GHG standards and ZEV sales mandate drive reductions in criteria pollution" 87 Fed. Reg. 14365; "These analyses conclude that GHG pollution exacerbates tropospheric ozone pollution, worsening California's air quality problems, and the manner in which GHG and criteria pollutant standards work together to reduce both forms of pollution." 87 Fed. Reg. 14,367.

California also faces "compelling and extraordinary conditions" with respect to climate change.

California's Legislature recognizes the severe threats the State faces from climate change. In enacting the California Global Warming Solutions Act of 2006 ((AB 32), Nuñez, Chapter 488, Statutes of 2006), California's legislature found and declared that:

> "Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other health-related problems."[83]

Those climate-change induced harms are also discussed in the Staff Report,[84] CARB's comments to the Proposed SAFE 1 Action,[85] CARB's and California's briefs in the *Union of Concerned Scientists v Natl. Highway Safety Administration* case,[86] and in CARB's comments in response to EPA's Notice of Reconsideration of its SAFE 1 Action.[87]

CARB's comments to the Proposed SAFE 1 Action and to the Notice of Reconsideration of that Action discuss some of the findings of California's Fourth Climate Change

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[83] California Health and Safety Code section 38501(a).

[84] "In California, climate change is contributing to an escalation of serious problems along with worsening air quality challenges, including raging wildfires, coastal erosion, extreme weather, disruption of water supply, threats to agriculture, spread of insect-borne diseases, and continuing health threats from air pollution." ISOR, Section I. (p. 7)' "; 'changes in net agricultural productivity, energy use, human health, property damage from increased flood risk, as well as nonmarket damages, such as the services that natural ecosystems provide to society' " ISOR, Section IV.D at p. 135 (quoting the Interagency Working Group (IWG) description of the social cost of carbon), and "[t]here are additional costs to society outside of the [social cost of carbon], including costs associated with changes in co-pollutants, the social cost of other GHGs including methane and nitrous oxide, and costs that cannot be included due to modeling and data limitations." ISOR, Section IV.D at pp. 135-136.

[85] Analysis in Support of Comments of the California Air Resources Board on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (October 26, 2018), EPA-HQ-OAR-2018-0283-5054, available at https://www.regulations.gov/comment/EPA-HQ-OAR-2018-0283-5054 (last accessed July 20, 2022).

[86] Proof Brief Of State And Local Government Petitioners and Public Interest Petitioners, Union of Concerned Scientists v. Natl Highway Safety Administration, 19-1230, (D.C. Cir. June 29, 2020); Final Reply Brief Of State And Local Government Petitioners and Public Interest Petitioners, Union of Concerned Scientists v. Natl Highway Safety Administration, 19-1230 (D.C. Cir. Oct. 27, 2020).

[87] EPA-HQ-OAR-2021-0257-0132

Assessment,[88] which discusses in greater detail some of the existing and expected impacts of climate change specifically occurring in California, including increases in ground-level ozone,[89] sea-level rise and coastal erosion,[90] variability in precipitation and reductions in water supply from reduced snowpack,[91] increased frequency of droughts and land subsidence,[92] lower agricultural crop yields,[93] increased susceptibility of forests to wildfires,[94] increased mortality risks to people due to extreme heat events,[95] and flooding of California's coastal transportation infrastructure.[96] These impacts constitute "compelling and extraordinary conditions" under any reasonable interpretation of Sections 209(b)(1)(B) and 209(e)(2)(A)(ii). Indeed, climate change conditions in California—from wildfires to droughts—are already "compelling and extraordinary," and they are only going to get worse absent emission reductions of the kind enabled by these standards.

It is also apparent, even under the improper interpretation that sections 209(b)(1)(B) and 209(e)(2)(A)(ii) require an inquiry regarding California's need for individual GHG emissions standards to meet compelling and extraordinary conditions, that the ACF regulation is needed to meet the above-mentioned compelling and extraordinary conditions because medium- and heavy-duty vehicles and the fossil fuels that power them are the largest contributors to emissions greenhouse gases (GHGs), accounting for approximately 50 percent of statewide GHG emissions, when accounting for transportation fuel production. Medium- and heavy-duty vehicles contribute a quarter of the transportation sector's GHG emissions and a third of the transportation sector's NOx emissions, a disproportionately high share considering these vehicles represent only about 1.8 million trucks among the 30 million registered vehicles in the state.[97] The ACF regulation requires substantial reductions in those emissions, culminating in the

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[88] California's Fourth Climate Change Assessment, California's Changing Climate 2018: A Summary of Key Findings (Aug. 2018) (last accessed Nov. 2, 2021), and California's Fourth Climate Change Assessment Statewide Summary Report (last accessed Nov. 2, 2021).

[89] California's Fourth Climate Change Assessment, California's Changing Climate 2018: Statewide Summary Report at 40.

[90] California's Fourth Climate Change Assessment, California's Changing Climate 2018: A Summary of Key Findings 6,18 (Aug. 2018).

[91] California's Fourth Climate Change Assessment, California's Changing Climate 2018: Statewide Summary Report at 24.

[92] California's Fourth Climate Change Assessment, California's Changing Climate 2018: A Summary of Key Findings 5,14 (Aug. 2018).

[93] Id. at 14.

[94] Id. at 6.

[95] Id. at 7.

[96] California's Changing Climate 2018: Statewide Summary Report at 54-55.

[97] ISOR, ES at p. 1; See also Section II.B at p. 108, citing to California's 2016 Mobile Source Strategy, California Air Resources Board, 2016 Mobile Source Strategy, 2016. Available at https://ww2.arb.ca.gov/sites/default/files/classic/planning/sip/2016sip/2016mobsrc.pdf

elimination of tailpipe GHG emissions from new vehicles in the covered categories. It cannot credibly argued that eliminating harmful emissions from sources that substantially contribute to California's compelling and extraordinary conditions are not needed.

California therefore meets the compelling and extraordinary criterion under either EPA's traditional interpretation of this criterion or under an impermissibly constrained individual standard interpretation.

C. Consistency with Clean Air Act Section 202(a)

Under the third waiver criterion, Section 209(b)(1)(C), EPA may deny a waiver if it finds that the additional or amended standards for which the waiver is requested would render California's new motor vehicle emission program inconsistent with Section 202(a) of the Clean Air Act.[98] "[I]n the waiver context, section 202(a) relates … to technological feasibility."[99] EPA has long understood the reference to Section 202(a) in Section 209(b)(1)(C) as referring to Section 202(a)(2)'s requirement that EPA's federal standards provide "such period as … necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period."[100] Under this long-standing, traditional interpretation, EPA can deny a waiver under Section 209(b)(1)(C) only if "the state's regulations … provide 'inadequate lead time to permit the development of the technology necessary to implement the new procedures, giving appropriate consideration to the cost of compliance within the time frame.'"[101]

"The scope of EPA's review under this criterion is narrow,"[102] and EPA considers the consistency prong—including the adequacy of lead time provided by California—in the context of the "discretion given to California in dealing with its mobile source pollution problems."[103] Indeed, EPA has acknowledged that the feasibility analysis "in the context of a California waiver" is distinct from the feasibility analysis that applies to federal

[98] 42 U.S.C. § 7543(b)(1)(C).

[99] *Motor & Equip. Mfrs. Ass'n v. Nichols*, 142 F.3d 449, 463 (D.C. Cir. 1998) ("*MEMA II*") (internal quotation omitted). In the waiver context, Section 202(a) also relates to federal certification, ensuring "that the Federal and California test procedures do not impose inconsistent certification requirements." *MEMA II*, 142 F.3d at 463. This aspect of the "consistency" criterion is not at issue here.

[100] 49 Fed. Reg. 18,887-02, 18,892 (May 3, 1984).

[101] *Id.* at 463 n.13 (quoting 46 Fed. Reg. 26,371-02, 26,372 (May 12, 1981)); *see also e.g.,* 43 Fed. Reg. 25,729 (June 14, 1978); 88 Fed. Reg. 20688, 20705, n. 154 (Apr. 6, 2023)

[102] 78 Fed. Reg. 2,112, 2,132 (Jan. 9, 2013).

[103] 49 Fed. Reg. 18,887-02, 18,892 (May 3, 1984); *see also* 78 Fed. Reg. 2,112, 2,133 (Jan. 9, 2013).

standards under CAA Section 202(a)(2).[104] EPA has also recognized that its consideration of costs must focus strictly on the costs of compliance because "[t]he appropriate level of cost-effectiveness is a policy decision of California that is considered and made when California adopts the regulations, and EPA, historically, has deferred to these policy decisions."[105] In addition, "EPA has long held that consistency with section 202(a) does not require that all manufacturers be permitted to sell all motor vehicle models in California."[106]

Under EPA's traditional approach (which, as explained below, should not be altered by importation of Section 202(a)(3)'s requirements), "the question for the Administrator is," simply, "whether the manufacturers' current and projected capabilities permit them to meet" the requirements of CARB's program.[107] "[I]t is not required that the requisite technology be developed at present, but rather that the available lead time appear to be sufficient to permit the development and application of that technology."[108] The burden to show that lead time is insufficient, that compliance costs will be excessive, or that the standards will otherwise render California's program infeasible is on those opposing the waiver request.[109]

As EPA has recognized, this waiver inquiry, like the other two, concerns California's whole program.[110] As demonstrated below, the ACF regulations' requirements themselves satisfy the third waiver criterion. They also do not cause other, pre-existing parts of California's program to become infeasible. Therefore, their addition to California's motor vehicle emissions control program will not alter that program's already-determined consistency with section 202(a) of the CAA.

1. Technological Feasibility and Lead Time

The ACF regulation's requirements are consistent with section 202(a) because the technology required to demonstrate compliance with the emissions standards and

[104] 49 Fed. Reg. 18,887-02, 18,892 (May 3, 1984) (recognizing that a feasibility test applicable to EPA under Section 202(a) either would not apply to California or "would not be applicable to its fullest stringency").

[105] 78 Fed. Reg. 2,112, 2,134 (Jan. 9, 2013).

[106] *Id.* (describing waivers granted despite limitations on sales of certain vehicles).

[107] *MEMA I*, 627 F.2d at 1126.

[108] 43 Fed. Reg. 25,729, 25,731 (June 14, 1978).

[109] *MEMA I*, 627 F2d at 1121; *see also e.g.,* 58 Fed. Reg. 4,166 (Jan. 13, 1993) ("Information presented to me by parties opposing California's waiver request did not satisfy the burden of persuading EPA that the standards are not technologically feasible within the available lead time, considering costs."); 79 Fed. Reg. 46,256, 46,263 (Aug. 7, 2014) ("OOIDA does not submit sufficient evidence to meet the opponents' burden of proof to show that the costs of compliance with the HD GHG Regulations are so excessive as to constitute technological infeasibility.").

[110] 88 Fed. Reg. 20706 (Apr. 6, 2023).

accompanying enforcement procedures already exists. CARB evaluated the technological feasibility of the emission standards and accompanying enforcement procedures and concluded, in Resolution 23-13 that the ACF regulation is technologically feasible.[111] Specifically, CARB found that medium- and heavy-duty ZEVs "are commercially available today, and are already capable of meeting the average needs of local and regional trucking operations and a variety of vocational uses."[112] Not only are ZEVs available today, the market is projected to grow. Medium to heavy-duty ZEV deployments in the United States are increasing year-over-year, i.e., by 104 percent in 2018, 23 percent in 2019, 60 percent in 2020, 397 percent in 2021, and 163 percent in 2022.[113]

During the ACF regulation's rulemaking action, some commenters asserted that manufacturers will not be able to produce the quantities of ZEV trucks needed to supply the demand of fleets subject to the ACF Regulation. CARB disagrees with that assertion. Over the last decade, advancements in battery technology have occurred, and the number of manufacturers of both battery electric and fuel cell electric vehicles have increased, which has accordingly resulted in the commercial availability of ZEVs in every weight class of medium- and heavy-duty vehicles, including the heaviest vehicle weight class of Class 7 and Class 8 vehicles. Specifically for that weight class, CARB is currently aware of 28 models, 8 of which are tractors, and anticipates that an additional 5 models of tractors will be commercially available by 2023.[114]

Furthermore, a number of manufacturers have announced their commitments to produce increasing quantities of medium- and heavy-duty ZEVs in the 2030 to 2040 timeframe. For example, Navistar committed to produce 50 percent of its new vehicle sales as ZEVs by 2030, and 100 percent of new vehicle sales by 2040.[115] Daimler Trucks has a target that 60 percent of their 2030 sales and 100 percent of their 2039 sales will be zero emission.[116] Volvo Group is targeting 50 percent zero emission sales in 2030 and 100 percent zero emission sales by 2040.[117] GM and Stellantis have each

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[111] Resolution 23-13 at p. 33

[112] Id. at p. 30.

[113] CALSTART. May 2023. Zeroing in on Zero-Emission Trucks a 2023 Market Update (web link: https://calstart.org/wp-content/uploads/2023/05/Zeroing-in-on-ZETs-May-2023-Market-Update.pdf, last accessed September 11, 2023).

[114] ISOR, p. 70.

[115] Navistar, Carbon Neutral Roadmap (web link: Our Commitments | Navistar® last accessed August 8, 2023.

[116] Reuters. May 20, 2021. Daimler Truck 'all in' on green energy as it targets costs. (web link: https://www.reuters.com/business/autos-transportation/daimler-truck-all-in-green-energy-shift-targets-costs-2021-05-20/, last accessed October 13, 2023).

[117] SAE International. September 29, 2023. Volvo's ambitious goal: 50% zero-emission trucks by 2030 (web link: https://www.sae.org/news/2023/09/volvo-trucks-net-zero-emissions, last accessed October 13, 2023)

announced or released electric pickups and vans.[118,119,120] Ford has announced the availability of its battery-electric F-150 Lightning,[121] a battery-electric E-transit van,[122] and plans to invest more than $22 billion to design and introduce electric versions of pickup trucks, commercial vehicles and SUVS, and committed that its entire commercial vehicle lineup in Europe will be zero emissions capable by 2024.[123]

In addition to the above commitments, CARB reached an agreement with the Truck and Engine Manufacturers Association (EMA), the members of EMA that manufacture heavy-duty on-road vehicles and engines, and the Ford Motor Company on July 5, 2023. That agreement has been referred to as the Clean Truck Partnership (Partnership).[124] The Partnership will advance the development of zero-emission medium- and heavy-duty vehicles, which will accordingly provide flexibility for SLG, drayage, and HPF fleets to comply with the ACF regulation. In pertinent part, EMA's members that manufacture heavy-duty on-road vehicles and engines and Ford commit to comply with CARB's Advanced Clean Trucks regulation and the 100 percent ZEV sales requirement established by the ACF regulation in Cal. Code Regulations, title 13, section 2016, "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."[125] That commitment illustrates that OEM manufacturers are capable of and committed to producing and supplying the ZEVs needed to meet the requirements of the ACF regulation.

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[118] GMC, Sierra EV Denali Edition 1, 2023 (web link: https://www.gmc.com/future-vehicles/sierra-ev-denali, last accessed August 8, 2023.

[119] General Motors, BrightDrop-Electric first to last mile delivery products, 2023 (web link: https://www.gobrightdrop.com/, last accessed August 8, 2023.

[120] The Detroit News, 2023 Ram ProMaster commercial van preps for next year's battery-electric model, March 2022 (web link: https://www.detroitnews.com/story/business/autos/chrysler/2022/03/09/2023-ram-promaster-van-preps-next-years-battery-electric-model/9430263002/, last accessed August 8, 2023.

[121] Ford, F-150® Lightning™, 2023 (web link: https://www.ford.com/trucks/f150/f150-lightning/2022/ last accessed August 8, 2023. Certain configurations of F-150 Lightnings are classified as medium-duty vehicles. For instance, the F-150 Lighning Pro has a GVWR of 8,550 lbs. News: 2022 Ford F-150 Lightning Weighs Less Than You May Think - The Fast Lane Truck (tfltruck.com), last accessed Oct. 13, 2023.[122] Ford, E-transit, 2023 (web link: https://media.ford.com/content/fordmedia/fna/us/en/products/evs/e-transit/2022-ford-e-transit.html, last accessed August 8, 2023.

[122] Ford, E-transit, 2023 (web link: https://media.ford.com/content/fordmedia/fna/us/en/products/evs/e-transit/2022-ford-e-transit.html, last accessed August 8, 2023.

[123] Ford, Ford's new science-based, Interim Carbon-Neutral Targets Highlight First Integrated Sustainability, Financial Report, March 31, 2021 (web link: https://media.ford.com/content/fordmedia/fna/us/en/news/2021/03/31/ford-integrated-sustainability-financial-report.html, last accessed August 8, 2023.

[124] CARB. 2023. CARB and truck and engine manufacturers announce unprecedented partnership to meet clean air goals, July 6, 2023, Clean Truck Partnership Agreement, available at: https://ww2.arb.ca.gov/sites/default/files/2023-07/Final%20Agreement%20between%20CARB%20and%20EMA%202023_06_27.pdf

[125] Id. at Appendix B to the Partnership.

The Staff Report discusses anticipated developments that will likely both reduce the costs and increase the number of commercially available ZEVs, including projected decreased costs of batteries and improvements in battery energy density due to economies of scale and increasing pace of technology development,[126] and decreased costs of other ZEV components resulting from the projected increased production of ZEVs.[127] These subsections briefly outline the technologies that manufacturers will likely utilize to comply with the ACF regulation's emission standards and accompanying enforcement procedures. Staff is assuming 10 percent of day cab tractors will be FCEV until 2027 and 25 percent afterwards. For sleeper cab tractors, staff is assuming an even split between BEVs and FCEVs as they are phased in to meet 2030 compliance requirements. For all other vehicles, staff is assuming all purchases would be BEV until 2026, purchases starting in 2027 onward would be 90 percent BEV and 10 percent FCEV.[128]

a. Battery Electric Vehicles, Near-Zero Emission Vehicles and ePTO

Battery electric vehicles (BEVs) and fuel-cell electric vehicles (FCEVs) are currently the most common examples of ZE technology incorporated in medium and heavy-duty on-road vehicles; vehicles equipped with either of these technologies would comply with the requirements of the ACF regulation. BEVs are solely propelled by electric motors that are powered by batteries that are powered solely by an external source of electricity and stored on-board the vehicles. Heavy duty truck manufacturers have formed a joint venture to manufacture battery cells specifically to meet the needs and specifications of truck applications with an initial factory capacity of 21GWh/year.[129]

The ACF regulation also allows fleets to procure near-zero emission vehicles (NZEVs)[130] until the 2035 model year.[131] Examples of NZEVs are vehicles powered by a combination of both an internal combustion engine and an electric motor, such as plug-in hybrid vehicles, or hybrid-electric vehicles that can be recharged from an off-vehicle electricity source and are capable of travelling a specified minimum all-electric

[126] ISOR, p. 69 fn. 92; CALSTART, How Zero-Emission Heavy-Duty Trucks Can Be Part of the Climate Solution, 2021 (web link: https://globaldrivetozero.org/site/wp-content/uploads/2021/05/How-Zero-Emission-Heavy-Duty-Trucks-Can-Be-Part-of-the-Climate-Solution.pdf ,last accessed August 2022).

[127] ISOR, pp. 90-91.

[128] ISOR, Section VII.B.3.Technology Mix Projections, page 167.

[129] Cummins Newsroom. Sep 06, 2023. Accelera by Cummins, Daimler Truck and PACCAR form a joint venture to advance battery cell production in the United States. (web link: https://www.cummins.com/news/releases/2023/09/06/accelera-cummins-daimler-truck-and-paccar-form-joint-venture-advance, last accessed September 11, 2023).

[130] NZEVs are vehicles that are capable of operating like a ZEV for a minimum number of miles, using electricity stored on-board the vehicle. Cal Code Regs., tit. 13, §§ 2013(b), 2015(b).

[131] NZEV can be purchased under ZEV Purchase and Daily Use Exemptions beyond the 2035 model year restriction in the NZEV flexibility provision.

range using only electricity that is stored on the vehicles.[132] Hyliion is producing a NZEV sleeper cab tractor that is expected to be available in 2024[133] and has recently received CARB certification.[134]

As CARB described in the ACF regulation's rulemaking record, medium- and heavy-duty BEVs are currently commercially available. "Medium- and heavy-duty ZEVs available today are already capable of meeting the average needs of local and regional trucking operations and a variety of vocational uses."[135] 134 medium- and heavy-duty models of ZEVs are either in production or have already been delivered to customers.[136]

Manufacturers and specialty upfitters are demonstrating and offering medium- and heavy-duty ZEVs and NZEVs in a broad variety of vehicle configurations that encompass many specialized vehicle configurations, not merely simple box and flatbed applications, including: armored cash-in-transit trucks, utility bucket trucks, frame-mounted and custom-chassis truck cranes, refuse trucks, vehicle recovery/towing trucks, construction, vocational dump, and ready-mix concrete trucks, heavy-haul logging and mining transport trucks, snow plows, and work trucks with electric power take off systems.[137]

Furthermore, to the extent that certain categories of medium- and heavy-duty vehicles need a source of zero-emitting auxiliary power, several manufacturers are currently offering battery electric auxiliary power systems that supply power to those categories of medium- and heavy-duty trucks needing such power, such as work trucks equipped with power take-off (PTO) systems. Odyne is selling battery-powered systems that can be paired with an BEV chassis without materially affecting the driving range of the BEV. Altec is also producing an electric power take-off (ePTO) system that provides 4.4 to 18 kWh of power to Class 4 through 8 vocational trucks. ZF has demonstrated their eWorx ePTO system on Daimler chassis and on Lion Electric chassis.[138] Parker, Eaton, and

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[132] Cal Code Regs., tit. 13, §§ 2013(b), 2015(b).

[133] Hyliion Press Release. January 25, 2023. Global Transportation Leader DSV Places Hypertruck ERX™ Order (web link: https://investors.hyliion.com/news/news-details/2023/Global-Transportation-Leader-DSV-Places-Hypertruck-ERX-Order/default.aspx , last accessed May 1, 2023).

[134] CARB Certification for the Hypertruck ERX, (web link: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/nvepb/executive_orders/EO%20Web%20Files/MDE-HDE/2023/0001/mde-hde_hdde_a-517-1.pdf, last accessed October 13, 2023).

[135] ISOR, Section I, pp. 8, Section I.C.1 (stating zero emission (ZE) refuse trucks are available from several manufacturers), Section I.D.1, p. 40 (listing manufacturers of commercially available ZEVs), Chapter I.F.1, stating "135 models [of ZEVs] are actively being produced and are being delivered to the customer."

[136] Appendix J to ISOR.

[137] FSOR, pp. 52-54.

[138] ZF eWorX ePTO system. (web link: https://www.zf.com/products/en/cv/products_74816.html, last accessed May 2023).

Terzo Power Systems are also offering ePTO systems that can be integrated into a ZEV or NZEV's high voltage electrical system.[139,140,141]

In 2021, BEVs and NZEVs comprised about 0.1 percent of the statewide medium and heavy-duty vehicles registered across all vehicle categories except motor homes, with a much higher percentage, 2.9 percent, for BEV bus registrations.[142] Although no BEV motor homes are registered in California today, Winnebago has announced their new eRV2 which is based on the all-electric Ford E-Transit high-roof cargo van[143] and Mercedes-Benz has a 2024 eSprinter available for order,[144] and has a BEV class A motorhome style product already seeing uptake in mobile clinic/blood donation applications.[145] Also, the disproportionately greater BEV registrations in the urban bus sector are likely due to the fact that, starting in 2023, CARB's Innovative Clean Transit Regulation requires transit agencies to phase in ZEVs as a percentage of their fleet.[146] Lastly, as of November 2021, a cumulative total of approximately 497,000 ZEVs were on order or had been ordered from North American manufacturers[147] and since 2017, over 270 North America fleets have deployed or ordered 244,281 ZEVs — most in California.[148] It is therefore beyond dispute that the technology associated with medium- and heavy-duty BEVs and NZEVs currently exists.

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[139] NTEA. March 8, 2023. Parker Chelsea Announces new ePTO at WTW23. (web link: https://www.ntea.com/WTS/WTW23-press-conferences/Parker-Chelsea-announces-new-Electric-Power-Take-Of-WTW23.aspx, last accessed May 2023).

[140] Bezares's innovative ePTO (web link: https://www.eaton.com/content/dam/eaton/products/transmissions/mobile-power/Bezares-ePTO-APSL0355.pdf, last accessed May 2023).

[141] Terzo Hydrapulse. Hydrapulse is a complete electro-hydraulic system (web link: https://terzopower.com/hydrapulse/, last accessed May 2023).

[142] CARB. May 2023. EMFAC 2021 vehicle registration database. (web link: https://arb.ca.gov/emfac/fleet-db/4574d835563bb2618f6e2d99187aa3e0c4a5a3a0, last accessed September 11, 2023).

[143] Globe Newswire Press Release. May 01, 2018. Winnebago Industries Launches All-electric/Zero-emission Commercial Vehicle Platform. (web link: https://winnebago.gcs-web.com/news-releases/news-release-details/winnebago-industries-launches-all-electriczero-emission?c=85260&p=irol-newsArticle&ID=2345792, last accessed September 11, 2023).

[144] Car and Driver. 2024 Mercedes eSprinter (web link: https://www.caranddriver.com/mercedes-benz/esprinter, last accessed September 11, 2023).

[145] Motor Week. May 10, 2018. All-Electric Winnebago. (web link: https://motorweek.org/this_just_in/all-electric-winnebago/, last accessed October 13, 2023).

[146] Title 13, CCR, sections 2023 and 2023.1–2023.11

[147] ISOR, Section I. pages 14 and 26, and Section V. Air Quality, A. Baseline Information, Table 24: Existing Medium- and Heavy-Duty Orders in North America as of November 2021, pages 138 – 140.

[148] EDF. Electric Fleet Deployment & Commitment List. (web link: https://docs.google.com/spreadsheets/d/1l0m2Do1mjSemrb_DT40YNGou4o2m2Ee-KLSvHC-5vAc/edit#gid=2049738669, last accessed September 11, 2023).

Staff performed a technology readiness assessment as part of the Staff Report (Enclosure 3, Appendix J) which was augmented with manufacturer press releases and other announcements included in the First and Second Notice of Public Availability of Modified Text and Availability of Additional Documents (Enclosures 6 and 18, respectively). Only new information or recently discovered information not included in the enclosures are referenced herein. The following information summarizes the types and numbers of medium- and heavy-duty BEVs that are currently available for order as of summer 2023:

- 20 cab and chassis vehicles, with at least 2 models in vehicle Classes 4 through 8 from 10 manufacturers
- 22 box trucks, with at least 2 models in Class 4 through 7 from 12 manufacturers
- At least 15 vans (including light duty package delivery trucks) with at least 2 models in Class 6 and below from 9 manufacturers
- 12 two-axle buses in Class 6 and below from 9 manufacturers
- 4 cutaway vans in Class 4 and below from 4 manufacturers
- 9 Class 8 yard tractors from 9 manufacturers[149]
- 5 flatbed fixed trucks in Class 4 through 6 from 4 manufacturers
- 11 day cab tractors with at least 2 models in Class 6 through 8 from 6 manufacturers
- 4 pickup trucks in Class 2b and 3 from 4 manufacturers with 2 models that have all-wheel drive capabilities
- 10 three-axle buses in Class 8 from 7 manufacturers
- 6 service/utility trucks in Class 4 through 6 from 5 manufacturers
- 5 sweepers with at least 2 models in Class 4 and 7 from 3 manufacturers[150]
- 5 side loader refuse compactor trucks in Class 6 and 8 from 4 manufacturers
- 4 rear loader refuse compactor trucks in Class 6 and 8 from 4 manufacturers
- 3 front loader refuse compactor trucks in Class 6, 7 and 8 from 2 manufacturers
- 3 dump trucks in Classes 2b, 4, and 6 from 3 manufacturers
- 1 Class 6 armored truck
- 2 bucket trucks (1 insulated and 1 non-insulated) in Class 8 from 2 manufacturers
- 1 Class 8 digger derrick[151]

[149] CORE Eligible Equipment Catalog, terminal tractor category (web link: https://californiacore.org/equipment-category/terminal-tractors, last accessed September 13, 2023).

[150] Includes NZEV Sweepers.

[151] Custom Truck website sales listing. (web link: https://www.customtruck.com/new-used/diggers/digger-derrick/terex-commander-4047-digger-derrick-on-2023-battle-motors-4x2-Int-44/P1000024, last accessed June 2023).

- 2 tractors with range greater than 300 miles[152] with one as a sleeper cab[153]

b. Fuel Cell Electric Vehicles

FCEVs refers to vehicles that are solely powered by an electric motor where energy for the motor is supplied by an electrochemical cell that produces electricity via the non-combustion reaction of hydrogen stored on-board the vehicle. FCEV technology currently exists, although it is not as widely commercially available as the BEV and NZEV technology described above in Section V.C.1.a.[154]

The range and fueling times of current FCEVs are comparable to the ranges and refueling times of conventional ICE medium- and heavy-duty vehicles, and FCEVs have demonstrated the feasibility of being integrated into regular medium- and heavy-duty vehicle fleet operations, including in fleet operations that involve the hauling of heavier loads and traveling longer distances. For example, 30 Class 8 FCEVs designed and manufactured by Hyundai Motor Company were recently deployed near the Port of Oakland.[155] UPS is operating fifteen FCEV delivery vans at its customer center in Ontario, California where the vehicles were demonstrated in regular UPS delivery service for one year.[156] Two hybrid FCEV yard trucks are undergoing validation on the commercial viability of cargo-handling application at the Port of Los Angeles.[157] Ten FCEV Class 8 tractors were developed through a collaboration between Kenworth Truck Company and Toyota Motor North America and deployed at Port of Los Angeles.[158] Biagi Bros. has been successfully testing Nikola's Class 8 FCEV beginning

[152] Tesla Class 8 tractor is undergoing fleet testing and is currently not taking orders (web link: https://www.freightwaves.com/news/tesla-delivers-fleet-of-semi-trucks-to-pepsi-facility-in-california, last accessed June 8, 2023).

[153] Includes a NZEV sleeper tractor.

[154] The Staff Report analysis predicts that across all vehicle types throughout the lifetime of this Regulation, 85 percent would be BEVs, and 15 percent would be FCEVs.

[155] CARB. LCTI: NorCAL Zero-Emission Regional and Drayage Operations with Fuel Cell Electric Trucks. Spring 2025. (web link: https://ww2.arb.ca.gov/lcti-norcal-zero-emission-regional-and-drayage-operations-fuel-cell-electric-trucks, last accessed September 11, 2023).

[156] CARB. LCTI: Fuel Cell Hybrid Electric Delivery Van Deployment (web link: https://ww2.arb.ca.gov/lcti-fuel-cell-hybrid-electric-delivery-van-deployment, last accessed September 11, 2023).

[157] CARB. LCTI: Zero Emissions for California Ports (ZECAP) (web link: https://ww2.arb.ca.gov/lcti-zero-emissions-california-ports-zecap, last accessed September 11, 2023).

[158] CARB. LCTI: Port of Los Angeles "Shore to Store" Project (web link: https://ww2.arb.ca.gov/lcti-port-los-angeles-shore-store-project, last accessed September 11, 2023).

in January of 2022.[159] Performance Food Group, Inc announced successful completion of Hyzon's first commercial run with a liquid hydrogen FCEV.[160]

Lastly, FCEV ZEV Milestone group 2 models that are in the early commercial market or nearing commercial availability including the following:

- 6 Class 8 day cab tractors from 4 manufacturers,
- 2 Class 8 yard tractors from 2 manufacturers,[161,162]
- 2 three-axle buses from 2 manufacturers, and
- 1 Class 8 dump truck.[163]

c. Additional Flexibility Provided Through Exemptions and Compliance Provisions

The compliance exemptions and extensions that were described in section III.E will provide fleets increased flexibility to comply with ACF regulation's requirements. It also bears emphasizing that the ACF regulation phases in its requirements over a time period that exceeds *two decades*, and that the ACF regulation also incorporates the ZEV Milestones Option, which provides fleets increased flexibility, as compared to the primary ZEV Model Year compliance option, to continue utilizing conventionally ICE powered vehicles until medium- and heavy-duty ZEVs capable of meeting their specific vehicle operational needs are commercially available. Moreover, although it is not relevant to EPA's determination whether to grant a waiver or authorization, CARB notes that a number of complementary policies are being implemented which will ensure that the market will be able to accommodate the quantities of medium- and heavy-duty ZEVs required by the ACF regulation.[164]

d. 100% ZEV requirement

The element of the ACF regulation that requires manufacturers to exclusively produce and deliver for sale in California new medium and heavy-duty ZEVs beginning in the

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[159] PR Newswire. Jan 25, 2023. 15 Nikola Tre FCEVs Headed to Biagi Bros. Inc. in California in Q4 2023 (web link: https://www.prnewswire.com/news-releases/15-nikola-tre-fcevs-headed-to-biagi-bros-inc-in-california-in-q4-2023-301730233.html, last accessed September 11, 2023).

[160] Hyzon Press Release. August 30, 2023. Hyzon motors successfully completes first customer demo of liquid hydrogen fuel cell electric truck (web link: https://www.hyzonmotors.com/in-the-news/hyzon-motors-successfully-completes-first-customer-demo-of-liquid-hydrogen-fuel-cell-electric-truck, last accessed September 11, 2023).

[161] Kalmar Press Release December 12, 2022. Kalmar part of Cargotec, is collaborating with Toyota Tsusho America Inc. (web link: https://www.kalmarglobal.com/news--insights/press_releases/2022/kalmar-collaborating-with-toyota/, last accessed June 2023.)

[162] Gaussin APM webpage (web link: https://www.gaussin.com/apm, last accessed June 2023.)

[163] New Power Progress June 30, 2023. (web link: Sixty dump trucks delivered with Accelera tech https://www.newpowerprogress.com/news/sixty-dump-trucks-delivered-with-accelera-tech/8030026.article, last accessed July 2023).

[164] See ISOR, pp. 29-35, 72-90.

2036 model year is technologically feasible. CARB's Advanced Clean Trucks (ACT) regulation[165] requires vehicle manufacturers to produce and deliver for sale in California specified quantities of medium- and heavy-duty ZEVs and NZEVs based on increasingly higher percentages of their annual sales of on-road heavy-duty vehicles, beginning in the 2024 model year. The ACT regulation currently requires manufacturers to produce 55% of their annual sales of Class 2b-3 vehicles, 75% of their Class 4-8 vehicles, and 40% of their Class 7-8 tractor vehicles as ZEVs and NZEVs, beginning in the 2035 model year.[166]

In granting California a waiver for the ACT regulation, EPA determined that the above mentioned requirements did not render California's program inconsistent with section 202(a) because the technology required to demonstrate compliance with the most imminent emissions standards and accompanying enforcement procedures already exists, and that refinements to such technology needed to comply with the later emissions standards are reasonably projected to be available in those later years.[167]

In this case, it is clear that the technology needed to comply with the requirement to produce new medium- and heavy-duty ZEVs already exists across all categories of affected vehicles, that CARB has identified factors that it anticipates will reduce the costs and increase the quantity of commercially available ZEVs, and that manufacturers have announced commitments to produce increasing quantities of medium- and heavy-duty ZEVs between 2030 and 2040. Moreover, it should be noted that the 100% ZEV sales requirement does not require manufacturers to continually design and redesign their engines or vehicles; once a manufacturer has produced a heavy-duty ZEV model (as many have done or are about to do), that manufacturer does not need to redesign that model, merely to increase the production of that model. Manufacturers can also transfer those technologies to additional vehicle models, and are provided over a decade to incorporate those technologies into their product lines.

e. Lead Time Comments Received During Rulemaking Action

During the ACF regulation's rulemaking action, some commenters asserted that CARB would not be able to obtain a waiver pursuant to section 209(b)(1)(C) of the CAA because the ACF regulation does not provide manufacturers the four years of lead time specified by section 202(a)(3)(C) of the CAA. Section 202(a)(3)(C) of the CAA requires that in adopting emissions standards for heavy-duty vehicles or heavy-duty engines, EPA's Administrator must provide specified periods of lead time and stability:

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[165] The ACT regulation is set forth in Cal. Code Regs., title 13, sections 1963, and 1963.1 through 1963.5. The ACT regulation also includes a one time fleet reporting requirement for owners and brokers of vehicles exceeding 8500 lbs GVWR in title 13, Cal. Code Regs., sections 2012, 2012.1, and 2012.2. This reporting requirement does not constitute an emission standard or emission-related requirement that is preempted by section 209(a) of the federal Clean Air Act.

[166] Cal. Code Regs., tit. 13, § 1963.1(b).

[167] 88 Fed. Reg. 20723 (Apr. 6, 2023).

> Any standard promulgated or revised under this paragraph and applicable to classes or categories of heavy-duty vehicles or engines shall apply for a period of no less than 3 model years beginning no earlier than the model year commencing 4 years after such revised standard is promulgated.

As EPA correctly concluded in granting California the waiver, in light of the addition of the ACT regulation to the State's program, commenters' claims are incorrect, and do not preclude a finding that the emissions standards promulgated by the ACF regulation are consistent with section 202(a) within the meaning of section 209(b)(1)(C). *See also* Appendix A to FSOR, pp. 35-36.

EPA confirmed that it did not interpret section 209(b)(1)(C) as requiring California to identically conform with every provision of section 202(a),[168] determined that the text, legislative history, and statutory context of relevant provisions of CAA section 202(a)(3)(C) only applies to federal standards promulgated under section 202(a)(3)(A) "and is therefore not relevant to California's program,"[169] and stated that its historical approach to section 209(b)(1)(C) and section 209(e)(2)(A)(iii) "reflects the best reading of the statute."[170]

2. Costs of Compliance

CARB appropriately considered the cost of compliance of the ACF regulation's requirements within the lead time provided. The D.C. Circuit "has held that the Section 202(a)(2) reference to compliance costs encompasses only the cost to the motor-vehicle industry to come into compliance with the new emission standards, and does not mandate consideration of costs to other entities not directly subject to the proposed standards." *Coal. for Responsible Regul., Inc. v. EPA*, 684 F.3d 102, 128 (D.C. Cir. 2012), *aff'd in relevant part, rev'd in other part sub nom. Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 134 S. Ct. 2427, 189 L. Ed. 2d 372 (2014) (citing *Motor & Equip. Mfrs. Ass'n, Inc. v. EPA,* 627 F.2d 1095, 1118 (D.C.Cir.1979)). Here, CARB analyzed both the costs of manufacturing the requisite vehicles and the costs imposed directly on those regulated—namely, the fleet owners and operators. That more than suffices to establish consistency with section 202(a).

In fact, CARB's analysis included all increases and decreases in direct costs associated with purchasing and supporting existing combustion-powered vehicles and new ZEVs throughout their lifetimes. This includes the upfront capital costs for ICE vehicles and ZEVs, associated infrastructure upgrades, changes to operating expenses, and other cost elements associated with this Regulation.

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[168] 88 Fed. Reg. 20713 (Apr. 6, 2023)

[169] Ibid. – [88 Fed. Reg. 20713 (Apr. 6, 2023)]. See also 88 Fed. Reg. 20711 – 20723.

[170] 88 Fed. Reg. 20,723.

The incremental vehicle price of ZEVs versus ICE vehicles was a key consideration in regulatory development. CARB's analysis of ICE vehicle costs included the price of vehicles today and estimated increases in cost over time due to the impacts of the Phase 2 GHG regulation, California's Heavy-Duty Omnibus regulation, and the federal Clean Truck Plan. CARB staff performed a component cost analysis for ZEVs by sizing the ZEV's powertrain to match a comparable ICE vehicle's power and average range needs, and forecasting the costs of BEV and FCEV components over time. Staff assumes that vehicles requiring ePTO systems, e.g., bucket trucks and refuse trucks, will incur an an additional 10 percent in vehicle acquisition costs until 2030 to, account for additional costs of electrification.[171] Based on these calculations, the cost of ZEVs is projected to be higher than their ICE vehicle equivalent in the near future with a cost premium varying from 20 percent to 100 percent in 2024 depending on the application. **Table 2** displays the projected new vehicle costs for a selection of vehicles in the scope of the rule in 2025, 2030, and 2035.

Table 2: New Vehicle Price Forecast for Select Vehicles

Vehicle Group	2025 MY	2030MY	2035 MY
Class 2b Cargo Van – Diesel	$40,137	$40,611	$40,611
Class 2b Cargo Van – Gasoline	$36,137	$36,611	$36,611
Class 2b Cargo Van – Battery-Electric	$54,835	$45,167	$40,361
Class 2b Cargo Van – Fuel Cell Electric	$89,469	$63,567	$48,115
Class 5 Walk-in Van – Diesel	$91,075	$94,884	$96,184
Class 5 Walk-in Van – Battery-Electric	$107,074	$94,260	$87,552
Class 5 Walk-in Van – Fuel Cell Electric	$127,842	$106,944	$92,056
Class 6 Bucket Truck – Diesel	$130,857	$135,206	$136,066
Class 6 Bucket Truck – Battery-Electric	$165,527	$145,791	$142,076
Class 6 Bucket Truck – Fuel Cell Electric	$194,304	$161,337	$146,756
Class 8 Refuse Packer – Diesel	$232,149	$236,566	$237,621
Class 8 Refuse Packer – Natural Gas	$259,189	$260,259	$260,453
Class 8 Refuse Packer – Battery-Electric	$293,965	$257,685	$238,496
Class 8 Refuse Packer – Fuel Cell Electric	$319,852	$272,754	$240,265
Class 8 Day Cab – Diesel	$145,689	$152,115	$153,170
Class 8 Day Cab – Natural Gas	$192,434	$195,513	$195,707
Class 8 Day Cab – Battery-Electric	$204,579	$164,611	$143,371
Class 8 Day Cab – Fuel Cell Electric	$221,352	$174,254	$141,765
Class 8 Sleeper Cab – Diesel	$155,689	$162,115	$163,170
Class 8 Sleeper Cab – Natural Gas	$242,434	$245,513	$245,707
Class 8 Sleeper Cab – Battery-Electric	$295,597	$221,901	$181,883
Class 8 Sleeper Cab – Fuel Cell Electric	$254,774	$203,552	$160,833

[171] ISOR, Appendix G, Total Cost of Ownershop, G-14.

These incremental costs will be offset in part or in some cases completely by the Qualifed Commercial Vehicle Tax Credit established by the Inflation Reduction Act which offers up to $40,000 per ZEV. Furthermore, these incremental costs are projected to decline over time due to reductions in vehicle costs and, in some cases, incremental costs are projected to be eliminated entirely. To illustrate this, the below bullets highlight the projected point in time when a ZEV will cost less than its ICE vehicle counterpart:

- 2030-2033
    - BEV: Class 3 service truck, Class 5 cutaway shuttle, Class 5 service truck, Class 5 walk-in van, Class 8 yard tractor
    - FCEV: Class 8 day cab tractor, Class 8 yard tractor
- 2034-2036
    - BEV: Class 2b cargo van, Class 8 box truck, Class 8 day cab tractor,
    - FCEV: Class 5 cutaway shuttle, Class 5 walk-in van, Class 8 box truck,
- 2037+
    - BEV: Class 2b pickup, Class 6 box truck, Class 8 dump truck, Class 8 refuse packer
    - FCEV: Class 8 motor coach, Class 8 sleeper cab tractor.

CARB staff also performed an analysis of a fleet owner's total cost of ownership (TCO) and the payback period of purchasing a ZEV versus a combustion-powered vehicle to better illustrate the costs and savings an individual fleet will incur in complying with the ACF regulation. While ZEVs are expected to have higher upfront costs due to higher vehicle costs and infrastructure expenses (at least before offsets such as those from the IRA are factored in), savings from lower fuel costs, maintenance reductions, and revenue from California's Low Carbon Fuel Standard program are expected to result in a positive total cost of ownership and payback period.. These costs are discussed in detail in the Statement of Economic Impacts, Form 399, related attachments, the Standardized Regulatory Impact Assessment (Enclosure 3f), Appendix G to the ISOR,[172] and Appendix B to the first 15-day changes (Enclosure 6d).

That analysis indicates that although the costs to acquire medium- and heavy-duty ZEVs are higher than the costs to acquire their conventional counterparts, ZEVs have lower operational costs than conventional vehicles, and will accordingly incur lower TCOs than conventional vehicles over their operational lives. The cost analysis also indicates that by 2030, a BEV Class 5 walk-in van is expected to have a 22 percent lower TCO versus a conventional diesel-fueled Class 5 walk-in van, resulting in lifetime savings of $47,000 per vehicle. A BEV and FCEV day cab operating in a drayage duty cycle is expected to have a 31 to 33 percent lower TCO versus a conventional diesel-fueled day cab tractor, resulting in lifetime per vehicle savings of $239,000 and

[172] ISOR, Appendix G, Total Cost of Ownership, page G-5.

$251,000, respectively.[173] The payback period for new ZEVs in comparison to their conventional diesel-fueled counterparts varies among vehicle classes and applications, but ranges from five to ten years in the 2025 model year timeframe, and from two to five years in the 2030 through 2035 model year timeframe, indicating that fleets can more than recoup the higher incremental new ZEV acquisition costs in a reasonable timeframe, even without rebates and tax credits. Given these findings, these costs are reasonable and can be accommodated in the time provided.[174]

Similar conclusions have been determined in other TCO analyses performed by third parties.[175] For example, National Renewable Energy Lab analysis shows even when considering indirect costs (dwell time costs due to refueling/recharging and lost payload capacity costs from heavier ZEV powertrains), medium- and heavy-duty BEV and FCEV could be economically competitive with diesel powertrains under several operating scenarios as early as 2025 for shorter-range applications.[176] Another study found that given the current range of diesel fuel prices in the United States of between $4 to $6 per gallon, and the range of charging costs between $0.15/kWh and $0.30/kWh, BEV Class 8 long-haul trucks can achieve TCO parity with diesel trucks by the end of this decade.[177] The requirements applicable to new medium- and heavy-duty ZEVs established by the ACF regulation will accordingly benefit affected fleets by providing them net savings resulting from reduced operating costs.

The ACF regulation as a whole is expected to have a cumulative net cost reduction of $48 billion from 2024-2050, representing a savings to regulated fleets. This value does not include the additional $26.5 billion in health savings to California residents. In conclusion, the ACF regulations' requirements are technologically feasible, considering the cost of compliance within the lead time provided. They will not, therefore, render California's program infeasible, and the waiver cannot be denied under Section 209(b)(1)(C).

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[173] ISOR, Appendix G, Total Cost of Ownership, page G-58 to G-62.

[174] CARB anticipates that ZEV vehicle costs will increasingly decrease over time due to economies of scale, which will accordingly decrease the payback period for new ZEVs from 2025 to 2035 across all vehicle types and sizes. Although not analyzed for the Regulation, used ZEVs will cost less to purchase than new ZEVs, and will have a much smaller payback period.

[175] ISOR, Section IV. 6. C. Benefits to Typical Businesses, page 126.

[176] Hunter, Chad, Michael Penev, Evan Reznicek, Jason Lustbader, Alicia Birky, and Chen Zhang. 2021. Spatial and Temporal Analysis of the Total Cost of Ownership for Class 8 Tractors and Class 4 Parcel Delivery Trucks. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5400-71796. (web link: https://www.nrel.gov/docs/fy21osti/71796.pdf, last accessed June 2023).

[177] Basma, H. et al. Total Cost of Ownership of Alternative Powertrain Technologies for Class 8 Long-Haul Trucks in the Unites States, page 21 (web link: https://theicct.org/wp-content/uploads/2023/04/tco-alt-powertrain-long-haul-trucks-us-apr23.pdf, last accessed June 2023).

3. Test Procedure Consistency

The ACF regulation does not present any issues of test procedure inconsistency because there are no analogous federal requirements. Consequently, manufacturers are not precluded from complying with both California and federal test requirements with one test engine or vehicle.

VI. THE ADVANCED CLEAN FLEETS REGULATION MEETS THE CRITERIA FOR A NEW AUTHORIZATION

As discussed in Section III.A and III.C., elements of the ACF regulation require SLG fleets and HPF fleets to purchase ZEV or NZEV off-road yard tractors, beginning January 1, 2024.

Yard tractors are heavy-duty Class 8 off-road vehicles that have a movable fifth wheel that can be elevated and are used in moving and spotting trailers and containers at a location or facility. They are very similar to on-road yard tractors, but may not be registered with the Department of Motor Vehicles (DMV) for on-highway use depending on whether their engines are certified for on- or off-road use, and if the tractor possesses standard on-road safety equipment such as turn signals.

CARB submits that for the reasons set forth below, and in the documents associated with the ACF regulation's rulemaking action, the Administrator must grant California a new authorization for these elements of the ACF Regulation.

A. Protectiveness

In adopting the ACF regulation, the Board approved Resolution 23-13 (Enclosure 16), in which it expressly declared:

> Be it further resolved that the Board hereby determines that the regulations adopted herein will not cause California's motor vehicle or off-road engine emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.

The Administrator has no basis to find that the Board's determination is arbitrary or capricious. There are simply no comparable federal requirements that fleets acquire ZEV or NZEV off-road yard tractors. In fact, to the extent that the ACF regulation requires fleets to acquire in-use ZEV or NZEV off-road yard tractors, EPA is not authorized by the CAA to adopt comparable requirements.[178] Accordingly, there is no way the addition of this element of the ACF regulation to California's program could render that program less protective than EPA's.

[178] CAA section 213 (42 U.S.C. § 7547); *Engine Manufacturers Association v. U.S. EPA* (EMA v. EPA), (D.C. Cir. 1996) 88 F.3d 1075.

B. Compelling and Extraordinary Circumstances

As discussed above in Section V.B, EPA interprets section 209(e)(2)(A)(ii) consistently with its interpretation of section 209(b)(1)(B), i.e, section 209(e)(2)(A)(ii) requires an inquiry whether California still has compelling and extraordinary conditions and therefore continues to need its own nonroad engine and equipment emissions control program. As demonstrated in Section V.B, California satisfies EPA's traditional interpretation of this criterion.

As also discussed in Section V.B, California continues to face "compelling and extraordinary conditions" with respect to criteria pollution. Accordingly in adopting Resolution 23-13, CARB found that "[d]espite California's progress in reducing emissions from mobile sources, stationary sources, and area sources, California still has the most severe air pollution problems",[179] and that CARB must continue to seek to reduce emissions reductions from all sources under its authority to, in pertinent part, meet federal and state ambient air quality standards and address the harms resulting from climate change,[180] and to "support California's statewide and regional attainment of the health-based NAAQS for ozone and PM2.5".[181] California needs this element of the ACF regulation to reduce this pollution, even under an alternative single-standard interpretation of Section 209(e)(2)(A)(ii). Indeed, California's Legislature has expressly recognized the need to reduce emissions from nonroad sources because reductions from on-road sources are insufficient to address the State's conditions:

> [D]espite the significant reductions in vehicle emissions which have been achieved in recent years, continued growth in population and vehicle miles traveled throughout California have the potential not only to prevent attainment of the state standards, but in some cases, to result in worsening of air quality.[182]

By adding federal and state authority to regulate nonroad engines, Congress and California's Legislature, respectively, acknowledged the increasing importance of reducing emissions from all mobile sources, including off-road nonroad engines. The Administrator has repeatedly agreed with CARB that California's continuing extraordinary conditions justify a separate California off-road emission control program.[183] Nothing in these conditions has changed to warrant a change in this determination. Accordingly, for all the aforementioned reasons, there can be no doubt of the continuing existence of compelling and extraordinary conditions justifying

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[179] Resolution 23-13 at p. 29.

[180] Resolution 23-13 at p. 29.

[181] Resolution 23-13 at p. 30.

[182] California Health and Safety Code section 43000.5; See also California Health and Safety Code sections 41750, 41754, 43000.5, 43013 and 43018..

[183] 60 Fed. Reg. 37440 (July 20, 1995); 61 Fed. Reg. 69093 (Dec. 31, 1996); 71 Fed. Reg. 29623 (May 23, 2006); 76 Fed. Reg. 77521 (Dec. 13, 2011).

California's need for its own nonroad vehicle and engine emissions control program. Nor can there be any doubt that California needs this element of the ACF regulation under an alternative interpretation of this criterion.

C. Consistency with Clean Air Act Section 209

As previously stated, CAA section 209(e)(2) requires consistency with the several subsections of section 209; that is, the Administrator must consider not only consistency with section 202(a) – as required under section 209(b)(1)(C) – but also consistency with other subsections of section 209. In its 209(e) Final Rule, EPA interpreted this provision to require that California's standards and accompanying enforcement provisions must also be consistent with sections 209(a), 209(e)(1), and 209(b)(1)(C).[184]

1. Consistent with CAA Section 209(a)

The elements of the ACF regulation applicable to off-road yard tractors are consistent with section 209(a), which preempts states and political subdivisions from adopting or attempting to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines. These elements of the ACF regulation are not preempted under section 209(a) because they solely establish requirements for off-road yard tractors, which are not new motor vehicles.[185]

2. Consistent with CAA Section 209(e)(1)

The elements of the ACF regulation applicable to off-road yard tractors are consistent with section 209(e)(1), which prohibits states and local subdivisions from adopting or enforcing any standard or other requirement relating to the control of emissions of new engines used in farm and construction equipment that are smaller than 175 hp or engines used in new locomotives. The subject elements do not establish any emissions standards for such vehicles or engines and are therefore not inconsistent with section 209(e)(1).

3. Consistent with CAA Section 209(b)(1)(C)

CAA section 209(b)(1)(C) provides that no waiver (authorization) shall be granted if the Administrator finds that California's standards and accompanying enforcement procedures are not consistent with section 202(a) of the CAA. The " 'technological

[184] Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards ("Section 209(e) Rule"), 59 Fed. Reg. 36969, 36983 (July 20, 1994).

[185] Yard tractors are not "self-propelled vehicles designed for transporting persons or property on a street or highway." CAA section 216(2), because they are not intended for use on highways. "Vehicle means either a device as defined in CVC section 670, or is a yard tractor that is not intended for use on highways. Cal Code Regs., tit. 13, §§ 2013(b), 2015(b).

feasibility' component of section 202(a) obligates California to allow sufficient lead time to permit manufacturers to develop and apply the necessary technology."[186]

The elements of the ACF regulation applicable to off-road yard tractors present no issues regarding technical feasibility, lead time, or costs. There is no question that zero emission yard tractors are commercially available. Kalmar purchased 12 TransPower electric drive systems at the outset of a CEC funded project called, Heavy-Duty Electric Yard Tractor project, with the expectation that tens if not hundreds more would be ordered within the next few years.[187] In 2019, over 20 Class 8 BEV yard tractors were deployed in freight operations at two BNSF Railway intermodal facilities: San Bernardino and Los Angeles, and at a new Daylight Transport facility in Fontana.[188] Furthermore, several fleets have placed orders for ZEV yard tractors. Walmart has ordered more than 20 electric yard tractors.[189] DHL Supply Chain has placed a single order of 50 BEV yard tractors, and in April 2022, committed to making BEV yard tractors the standard in their operations and affirmatively canceled all further orders of diesel yard tractors.[190] Amazon has placed a single order for 329 BEV yard tractors.[191]

As discussed in Section VI, although off-road yard tractors are not registered for use on streets or highways, they are generally configured similarly to on-road trucks, but may not be equipped with all the necessary safety features required for highway travel. Consequently the same technologies as described in Section V.C for the elements of the ACF regulation applicable to on-road vehicles are equally available for off-road yard tractors, at the same costs as described above in Section V.C.2. Class 8 BEV yard tractors were included in the cost model with a 2024 purchase price of $156,978.95 and price parity with conventionally powered tractors achieved by 2032. In 2021, Orange

[186] Motor & Equip. Mfrs. Ass'n v. Nichols, 142 F.3d 449, 463 (D.C. Cir. 1998) (quoting Ford Motor Co. v. EPA, 606 F.2d 1293, 1296 n. 17 (D.C.Cir.1979)).

[187] CEC. November 2019. Heavy-Duty Electric Yard Tractor (web link: https://www.energy.ca.gov/sites/default/files/2021-05/CEC-600-2019-064.pdf, last accessed September 14, 2023).

[188] CARB. LCTI: Multi-Class Heavy-Duty Zero-Emission Truck Development Project for Intermodal and Warehouse Facilities (web link: https://ww2.arb.ca.gov/lcti-multi-class-heavy-duty-zero-emission-truck-development-project-intermodal-and-warehouse, last accessed September 14, 2023).

[189]The Buzz EV News. May 24, 2023. Walmart receives first in fleet of electric terminal tractors (web link: Walmart receives first in fleet of electric terminal tractors (thebuzzevnews.com), last accessed Oct. 13, 2023).

[190] DHL May 20, 2023. (web link: DHL Supply Chain Advances Sustainability Efforts With 50 Electric Yard Trucks - DHL - United States of America), last accessed Oct. 13, 2023.

[191] GAUSSIN Group. GAUSSIN Group receives an order from AMAZON for 329 electric yard tractors Press Release Dec. 14, 2022. (web link: 639a2d52200c00fc20ab320a_PR Gaussin Amazon VDef VE 14 12 2022.pdf (website-files.com))

EV sold over 50 percent of their trucks to customers that did not leverage those purchases with incentives or public funding.[192]

No issue regarding test procedure inconsistency between federal and California test procedures exists because there are no analogous federal requirements. Consequently, manufacturers are not precluded from complying with both California and federal test requirements with one test engine or vehicle.

These elements of the ACF regulation Amendments are accordingly clearly technically feasible because they mirror the requirements that CARB has already demonstrated in Section V.C are consistent with CAA section 202(a). These elements, therefore, will not render California's nonroad program infeasible, and the authorization cannot be denied under section 209(e)(2)(A)(iii).

VII. CONCLUSION

Based on the foregoing, CARB respectfully requests that the Administrator grant California's requests for the waiver and authorization actions as described in this document pursuant to CAA section 209.

CARB Contacts

Technical questions or requests for additional technical information on this item should be directed to Tony Brasil, Chief, Transportation and Clean Technology, Tony.Brasil@arb.ca.gov. Legal questions should be directed to Alex Wang, Senior Attorney, Office of Legal Affairs, at Alex.Wang@arb.ca.gov.

Reference Materials from Advanced Clean Fleets Regulation

1. Notice of Public Hearing
   https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/notice2.pdf

2. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, dated August 30, 2022
   https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf

3. Appendices A1-J to Staff Report

[192] Orange EV. February 16, 2022. 10 years and Four Million Miles Later, Orange EV Leads Heavy Duty Electric Truck Market | Electric Trucks (web link: https://orangeev.com/orange-ev-news/orange-ev-leads-electric-truck-market/, last accessed October 13, 2023).

3a. Appendix A-1. Proposed Regulation Order: State and Local Government Agency Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appa1.pdf

3b. Appendix A-2. Proposed Regulation Order: High-Priority and Federal Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appa2.pdf

3c. Appendix A-3: Proposed Regulation Order: Drayage Truck Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appa3.pdf

3d. Appendix A-4: Proposed Regulation Order: 2040 100 Percent Medium- and Heavy-Duty Zero Emission Vehicle Sales Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appa4.pdf

3e. Appendix B: List of References
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appb.pdf

3f. Appendix C-1: Original Standard Regulatory Impact Assessment Submitted to Department of Finance
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appc.pdf

3g. Appendix C-2: Department of Finance Comment Letter
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appc1.pdf

3h. Appendix C-3: Summary and Response to Department of Finance Standard Regulatory Impact Assessment
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appc2.pdf

3i. Appendix D: Draft Environmental Analysis
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appd.pdf

3j. Attachment A to Appendix D: Environmental and Regulatory Setting
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appda.pdf
3k. Attachment B to Appendix D: Summary of Impacts Table
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appdb.pdf

3l. Appendix E: Public Process for Development of the Proposed ACF Regulation
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appe.pdf

3m. Appendix F: Emissions Inventory and Results
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appf.pdf

3n. Appendix G: Total Cost of Ownership Document
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appg.pdf

3o. Appendix H-1: Purpose and Rationale for State and Local Government Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph1.pdf

3p. Appendix H-2: Purpose and Rationale for High Priority and Federal Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph2.pdf

3q. Appendix H-3: Purpose and Rationale for Drayage Truck Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph3.pdf

3r. Appendix H-4: Purpose and Rationale for 100 Percent Medium and Heavy-Duty Zero-Emission Vehicle Sales Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/apph4.pdf

3s. Appendix I: Modified Baseline Analysis
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appi.pdf

3t. Appendix J: Commercial ZEV List 2022
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appj.xlsm

4. Transcript of October 27, 2022 Public Hearing
https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2022/mt102722.pdf

5. Notice of Public Availability of Modified Text and Availability of Additional Documents, Posted March 23, 2023
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/15daynotice.pdf

6. Appendices to Notice of Public Availability of Modified Text and Availability of Additional Documents

6a. Appendix A-1: Proposed 15-Day Changes to the Proposed Regulation Order for State and Local Government Agency Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15da1.pdf

6b. Appendix A-2: Proposed 15-Day Changes to the Proposed Regulation Order for the High Priority and Federal Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15da2.pdf

6c. Appendix A-3: Proposed 15-Day Changes to the Proposed Regulation Order for the Drayage Truck Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15da3.pdf

6d. Appendix B: Updated Costs and Benefits

https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acf15db.pdf

7. Final Environmental Analysis
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffinalea.docx

8. Attachments to Final Environmental Analysis

8a. Attachment A: Environmental and Regulatory Setting
(https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appda.pdf

8b. Attachment B: Summary of Impacts Table
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appdb.pdf

9. Response to Comments on the Draft Environmental Analysis
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acfrtc.pdf

10. Findings and Statement of Overriding Considerations
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffindings.pdf

11. Final Regulation Order: State and Local Government Agencies
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffroa1.pdf

12. Final Regulation Order: High Priority and Federal Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffroa2.pdf

13. Final Regulation Order: Drayage Truck Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffroa3.pdf

14. Final Regulation Order: 2036 100 Percent Medium- and Heavy-Duty Zero Emission Vehicle Sales Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/acffroa4.pdf

15. Transcripts of April 27, 2023
https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt042723.pdf and April 28, 2023 Public Hearings
https://ww2.arb.ca.gov/sites/default/files/barcu/board/mt/2023/mt042823.pdf

16. Resolution 23-13
https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2023/res23-13.pdf

17. Form 399, Economic and Fiscal Impact Statement and Attachment, signed June1, 2023 (PDF)

18. Second Notice of Public Availability of Modified Text and Availability of Additional Documents, posted August 4, 2023

https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/2nd15daynotice.pdf

18a. Appendix A-1: State and Local Government Agency Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acf215d1.pdf

18b. Appendix A-2: High Priority and Federal Fleets Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acf215d2.pdf

18c. Appendix A-3: Drayage Truck Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acf215d3.pdf

18d. Appendix A-4: 2036 100 Percent Medium- and Heavy Duty Zero Emissions Vehicle Sales Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acf215d4.pdf

19. Executive Order R-23-003, Executed August, 28, 2023
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/eo.pdf

19a. Attachment 1 to the Executive Order
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acfattacheo.pdf

20. Final Regulation Order: State and Local Government Agency Fleet Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffro11.pdf

21. Final Regulation Order: High Priority and Federal Fleets Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffro21.pdf

22. Final Regulation Order: Drayage Truck Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffrod31.pdf

23. Final Regulation Order: 2036 100 Percent Medium- and Heavy Duty Zero Emissions Vehicle Sales Requirements
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffro41.pdf)

24. Request for Early Effective Date, dated June 9, 2023 submitted to OAL on August 30, 2023
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/reed.pdf)

25. Updated Informative Digest
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/uidpdf.pdf)

26. Notice of Decision, Dated August 28, 2023
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/nodec.pdf)

27. Final Statement of Reasons
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffsor.pdf)

27a. Appendix A to the Final Statement of Reasons
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffsorappa.pdf)

28. Addendum to the Final Statement of Reasons, prepared August 30, 2023
https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffsoradd.pdf)

29. OAL Approval letter, dated September 29, 2023 (PDF)