

In the Matter of California's Request
for Authorization Pursuant to Clean Air
Act Section 209(e) for the 2022
Amendments to the In-Use Off-Road
Diesel-Fueled Fleets Regulation

https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf

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 2022 Amendments that are the subject of this request. Section IV describes the criteria and principles applicable to authorization requests, and Section V demonstrates that EPA has no basis to deny the requested authorization. The remainder of Section I discusses authorizations that EPA has previously granted for CARB's In-Use Off-Road Diesel-Fueled Fleets regulation.⁴

A. Preexisting California In-Use Off-Road Diesel-Fueled Fleets Regulations That Have Been Granted Authorization

1. Initial In-Use Off-Road Diesel-Fueled Fleets Regulation

The Board adopted the initial In-Use Off-Road Diesel-Fueled Fleets Regulation (Initial Regulation) at a public hearing on July 26, 2007. The Initial Regulation established emission standards and other requirements applicable to in-use off-road diesel vehicles⁵ that operate within California. The Initial Regulation established requirements based on the total horsepower (hp) of the vehicles in the fleet and the classification of the fleet owner.

- A small fleet is defined as a fleet of vehicles with a total maximum power of less than or equal to 2,500 hp that is owned by a business, non-profit organization, or local municipality⁶ or a fleet owned by a local municipality in a low-population county and a fleet owned by a non-profit training center, irrespective of the fleet's total maximum power.
- A medium fleet is defined, in general, as a fleet of vehicles with a total maximum power greater than 2,500 hp but less than or equal to 5,000 hp.⁷
- A large fleet is typically a fleet of vehicles with a total maximum power greater than 5,000 hp and includes both federal and State of California-owned fleets.⁸

The Initial Regulation required owners of in-use off-road diesel fleets to meet specified fleet-average emission rate targets for NOx and PM.⁹ Owners not meeting

⁴ In 2013, EPA issued an authorization for the initially adopted Regulation and 2009 and 2010 amendments to the Regulation that are described in more detail in Sections I.A.1 through 4 of this document. See 78 Fed. Reg. 58,090 (Sept. 20, 2013).

⁵ Off-road diesel vehicles are used in construction, mining, industrial operations, and other industries and include a wide variety of vehicles such as small skid steer loaders, large mining trucks, dozers, forklifts, cranes, and excavators.

⁶ Cal. Code Regs., tit. 13, § 2449 (c)(28)(C); Unless otherwise noted, all future citations in this authorization request are to title 13, California Code of Regulations.

⁷ § 2449 (c)(28)(B).

⁸ § 2449 (c)(28)(A).

⁹ Large fleets were required to comply with the NOx and PM fleet-average emissions rate targets by March 1, 2010, and medium fleets by March 1, 2013. Small fleets were required to meet the PM fleet-average emissions rate targets by March 1, 2015, and were not required to meet any NOx fleet-average emissions rate targets. The NOx and PM fleet-average targets for all fleets are lowered every year and are different for every horsepower group.

the NOx or PM fleet average emission rate targets were required to comply using an alternative compliance requirement known as the “best available control technology” (BACT) requirement¹⁰ by specified compliance dates.

The fleet average targets became more stringent over time. To meet the NOx and PM fleet-averaged emissions standards, fleets could retrofit their vehicles’ exhaust systems with verified diesel emission control devices (VDECS), replace the engines in existing vehicles with cleaner-emitting engines (i.e., repower), replace older, higher emitting vehicles with newer, cleaner-emitting vehicles, retire high-emitting vehicles, and/or designate high-emitting vehicles as low-use vehicles (limiting operation to less than 100 hours per year).

The Initial Regulation limited the ability of fleet owners to add vehicles to their fleets. Fleets that met the fleet average targets for a specific year were prohibited from adding any vehicles that would cause the fleet average to exceed the applicable fleet average target for that year. Fleets that did not meet the fleet average target and were required to comply with the BACT requirement could only add vehicles that were equipped with Tier 2 or higher engines, or flex-certified engines¹¹ as provided for in section 2423(d), and vehicles where the engine’s NOx emission factor was less than or equal to the NOx Target for engines in the same horsepower group for the most recent compliance date.

After March 1, 2020, large and medium fleets could only add a vehicle equipped with a Tier 3 or higher engine to their fleets. Small fleets could only add vehicles equipped with Tier 3 or higher engines after March 1, 2025.

2. January 2009 Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation

On January 22, 2009, the Board adopted amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation (January 2009 Amendments), which provided fleets with additional flexibility and clarified requirements.

3. July 2009 Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation

On July 23, 2009, the Board amended the In-Use Off-Road Diesel-Fueled Fleets Regulation (July 2009 Amendments). The July 2009 Amendments established provisions to incentivize fleets to comply with requirements earlier than otherwise required.

¹⁰ The NOx BACT requirement could be met by retiring a vehicle, designating a vehicle as a low-use vehicle, repowering a vehicle, rebuilding the engine to a more stringent emissions configuration, or installing a VDECS verified to achieve NOx reductions. The PM BACT requirement could be met by installing a VDECS verified to achieve PM reductions.

¹¹ A flex-engine means an engine certified on or after January 1, 2007, to the implementation flexibility standards in section 2423(d).

4. December 2010 Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation

On December 17, 2010, CARB amended the In-Use Off-Road Diesel-Fueled Fleets Regulation to significantly modify the regulation's compliance dates and in-use performance requirements. The 2007-2009 global recession caused a significant loss in employment in the construction sector and other industries affected by the Off-Road Regulation, which led CARB to review and update the methodology and data inputs used in CARB's initial estimates of off-road diesel vehicle emissions. CARB concluded that past and future emissions from off-road vehicles were significantly lower than what was previously estimated.

Also, as the implementation of the Off-Road Regulation began, it became clear that for many fleets and applications, retrofits presented a significant challenge, and accelerated turnover to newer vehicles was a more attractive compliance option. CARB provided additional flexibility to fleets by allowing them to choose between turnover and retrofitting as a compliance strategy. CARB delayed the original compliance schedule and simplified the annual requirements so that in each compliance year a fleet must only meet a single fleet average emissions target—a combined NO_x plus PM standard¹²—rather than separate fleet average targets for each of these two pollutants.

CARB retained the requirement for owners that did not meet the fleet average emissions target to comply using the BACT requirement; however, CARB reduced the BACT rate from a 28 percent requirement to a combined 4.8 to 10 percent requirement. Finally, the 2010 Amendments removed mandatory retrofitting requirements so that retrofitting is a compliance option under the BACT pathway rather than a mandate. EPA granted CARB an authorization for the Initial Regulation, as amended by the 2009 and 2010 Amendments, in 2013.¹³

II. OVERVIEW OF CARB'S RULEMAKING ACTION

On November 17, 2022, CARB conducted a public hearing to consider the 2022 Amendments. On December 8, 2022, the Board approved the adoption of the 2022 Amendments by Resolution 22-19 (Enclosure 4). CARB staff made additional modifications to the 2022 Amendments available for a public comment period that ended on April 25, 2023, and CARB's Executive Officer formally adopted the 2022 Amendments in Executive Order R-23-001 (Enclosure 6) on June 15, 2023.

¹² The combined NO_x plus PM standard is based on a fleet's NO_x fleet average, adjusted to reflect verified diesel emission control strategies, including those that only reduce PM.

¹³ 78 FR 58,090 (Sep. 20, 2013).

III. SUMMARY OF THE 2022 AMENDMENTS

This section provides an overview of the emissions standards and other requirements established by the 2022 Amendments to the In-Use Off-Road Diesel-Fueled Fleets regulation (2022 Amendments) in light of which CARB is requesting an authorization for its updated program. More detailed descriptions of these provisions are provided in the Staff Report: Initial Statement of Reasons (Staff Report, Enclosure 2), the Notice of Public Availability of Modified Text and Additional Documents and Information (Enclosure 5), and the Final Statement of Reasons (FSOR, Enclosure 7).

A. Phase-out of Tier 0 Through 2 Off-Road Engines and 1994 Through 2003 MY On-Road Engines

The 2022 Amendments now prohibit fleets from operating vehicles powered by Tier 0, 1, or 2 off-road engines and specified model years (MYs) of on-road engines¹⁴ in California after specified dates, based on fleet size, as summarized in Table 1, below. Some exemptions apply, such as for vehicles used less than 200 hours per year (i.e., low use).

¹⁴ The Off-Road Regulation applies to only a small set of on-road vehicles, such as workover rigs, two-engine cranes, two-engine water well drill rigs, and other two-engine on-road vehicles. Such vehicles are not covered by the preemption provision of CAA section 209(a) in that they are neither new motor vehicles or new motor vehicle engines.

Table 1. Tier and MY Phase-Out Dates by Fleet Size

Year (January 1)	Large Fleets	Medium Fleets	Small Fleets	Ultra-Small Fleets¹⁵
2024	Tier 0/MY 1994 or older on-road			
2026	Tier 1/MY 1999 or older on-road	Tier 0/MY 1994 or older on-road		
2028	Tier 2/MY 2003 or older on-road	Tier 1/MY 1999 or older on-road	Tier 0/MY 1994 or older on-road	Tier 0/MY 1994 or older on-road
2030		Tier 2/MY 2003 or older on-road	Tier 1/MY 1999 or older on-road	Tier 1/MY 1999 or older on-road
2032			Tier 2/MY 2003 or older on-road	
2036				Tier 2/MY 2003 or older on-road

In addition, for all fleet sizes, the 2022 Amendments discontinue the preexisting low-use vehicle exemption and the Jobs Corps exemption for Tier 0 or MY 1994 or older on-road engines, requiring the removal of those engines from all fleets' California operations by January 1, 2036.¹⁶ Tier 0 low-use vehicles contribute significant NOx and PM emissions compared to newer vehicles and under the preexisting Off-Road Regulation could have operated indefinitely.

¹⁵ These compliance requirements apply to fleets that are complying with section 2449(e)(16) which allows for fleets with 500 hp or less to choose to comply with an optional compliance schedule. For simplicity, CARB has shortened this to "ultra-small fleets."

¹⁶ Prior to the 2022 Amendments, the low-use vehicle exemption would have allowed for Tier 0 and MY 1994 or older vehicles to continue to operate in a fleet indefinitely. Additionally, vehicles used by the Job Corps were previously exempt from all performance requirements and only had to comply with reporting and labeling requirements.

B. Expansion of the Additional Vehicle Requirements

The 2022 Amendments expand the preexisting prohibition of adding vehicles powered by Tier 0, 1, and 2 engines to now also prohibit the addition of vehicles powered by Tier 3 and Tier 4i engines, as well as MY 2006 or older on-road engines, to fleets, based on fleet size, as summarized in Table 2, below. This requirement ensures that only vehicles powered by the lowest emitting engines are added to a fleet after the specified compliance dates.¹⁷

Table 2. Compliance Dates for the Restrictions on Adding Vehicles

Year (January 1)	Large Fleets	Medium Fleets	Small Fleets	Ultra-Small Fleets
2024	Tier 3 Tier 4i/MY 2006 or older on-road	Tier 3 Tier 4i/MY 2006 or older on-road	Tier 3	Tier 3
2028			Tier 4i/MY 2006 or older on-road	
2035				Tier 4i/MY 2006 or older on-road

C. Contracting Requirements

The 2022 Amendments require prime contractors¹⁸ and public works awarding bodies¹⁹ to only hire compliant fleets beginning January 1, 2024. These requirements will enhance the enforceability of the Off-Road Regulation and help ensure the expected emissions reductions of the Off-Road Regulation are achieved. Specifically, these entities must:

¹⁷ Fleets may be exempt from the Tier 4 Interim requirements if Tier 4 Final technology is not available and the delay in obtaining the technology is documented as required by Section 2449(e)(6) & (9).

¹⁸ A prime contractor is defined as the entity that contracts directly with the project owner for any project involving the use of vehicles subject to the Off-Road Regulation. Section 2449(c)(44).

¹⁹ Public works awarding bodies are defined as any public agencies that award or enter into contracts for public works projects, which are also proposed to be defined in the Proposed Amendments. Section 2449(c)(46).

- Obtain and retain copies of the valid Certificates of Reported Compliance²⁰ for the fleet selected for the contract and their listed subcontractors, if applicable; and
- Not enter into a contract with a fleet if the fleet does not have a valid Certificate of Reported Compliance for itself or for their listed subcontractors, if applicable.

D. Prime Contractor Requirements

The 2022 Amendments establish the following requirements for prime contractors that will help to increase the enforceability of the Off-Road Regulation:

- Collect new Certificates of Reported Compliance between March 1 and June 1 of each year for each fleet that has an ongoing contract with the prime contractor;
- Report any observed noncompliance with the Off-Road Regulation and report any fleets intending to operate at the job site that do not possess a valid Certificate of Reported Compliance;
- Disclose to CARB, upon request, the responsible party for all vehicles subject to the Off-Road Regulation operating at their job sites; and
- Prominently display a sign at each of their job sites, if work on the job site lasts longer than seven days, that includes information regarding the applicability of the Off-Road Regulation, key requirements of the Off-Road Regulation, and a method to notify CARB when noncompliance with the Off-Road Regulation is observed.

E. Renewable Diesel Requirements²¹

Fleets are required to fuel their off-road vehicles with RD99/100 beginning January 1, 2024.

²⁰ After the initial reporting required by section 2449(g)(1) and the annual reporting and responsible official affirmation of reporting required by section 2449(g)(2) is received by CARB, if the report and affirmation indicate that the fleet is in compliance with the requirements of the Off-Road Regulation, CARB will provide the fleet with a Certificate of Reported Compliance.

²¹ This renewable diesel fueling requirement constitutes an in-use operational control of nonroad engines that is not preempted by section 209(e) of the Clean Air Act (CAA). CAA section 209(d); 62 Fed. Reg. 67,733, 67,736 (Dec. 30, 1997).]

F. Optional Zero-Emission Compliance Flexibility

The 2022 Amendments include two zero-emission flexibility provisions beginning on January 1, 2024. These provisions provide a regulatory incentive that encourages the implementation of off-road zero-emission vehicles (ZEVs).

- A fleet may delay the phase-out of an existing vehicle powered by a Tier 1 or Tier 2 off-road engine for two years for each off-road ZEV it adds to the fleet if all required conditions are met. The ZEV must have a power output that is similar to the power output rating of the vehicle whose phase-out is being delayed. This option provides fleet operators the opportunity to use ZEVs in settings that are most important to them while obtaining some compliance flexibility in return; and
- A fleet may use an alternate compliance pathway and be exempted from the performance requirements of the Current Regulation and the tier phase-out requirements of the 2022 Amendments if it submits a Zero-Emission Technology Application (ZETA) to CARB, CARB approves the ZETA as meeting the regulatory requirements, and the fleet implements the approved ZETA. A ZETA specifies the steps a fleet will implement to replace, at a minimum, 50 percent of its total hp with zero-emission technology by January 1, 2035. If CARB approves a fleet's ZETA, that fleet must adhere to the approved ZETA and provide annual updates to CARB demonstrating its progress in meeting the approved ZETA. If CARB determines that a fleet does not adhere to its approved ZETA based on metrics outlined in the 2022 Amendments, then the fleet must immediately comply with the performance requirements of the Current Regulation and the tier phase-out requirements of the 2022 Amendments. A fleet may choose this option for a portion of its fleet that operates at a single facility.

G. Additional Requirements

The 2022 Amendments also include these additional changes:

- Removed an exemption that allowed for small fleets to retain vehicles with no VDECS available indefinitely (these are primarily vehicles with Tier 0 engines). The vehicles must now be included in the fleet averaging calculation and comply with the BACT requirements if a fleet is not meeting the fleet target.
- Removed the year-by-year low use option, but established additional flexibility for vehicles that are designated as permanent low-use to allow an averaging of use over three years to meet the low-use hour limit criteria. Additionally, the 2022 Amendments established more detailed documentation including requirements for photographic documentation of hour meter readings or written log and notification to CARB when a vehicle's hour meter has been replaced.

- Fleets are now prohibited from adding a vehicle with a Tier 0 engine as either a vehicle designated as a dedicated snow removal vehicle, a vehicle used for emergency operations, or a job corps vehicle. However, fleets are still allowed to add used vehicles with Tier 1 or newer engines to their fleet for these operations.

IV. AUTHORIZATION CRITERIA AND PRINCIPLES

A. Criteria for Granting Authorizations Under CAA Section 209(e)

Section 209(e)(2)(A) of the CAA sets forth the protocol for the EPA Administrator to grant California an authorization to adopt and enforce standards and other requirements for the control of emissions from new and in-use nonroad engines that are not conclusively preempted by section 209(e)(1) (i.e., new engines less than 175 horsepower used in farm and construction equipment and vehicles and new locomotives and new engines used in locomotives. Under section 209(e)(2)(A), which closely tracks the language in Section 209(b)(1) for waivers of federal preemption of California's on-road emission standards, the Administrator is directed 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 its separate state program to meet compelling and extraordinary conditions; or
- (3) the state program and accompanying enforcement procedures are "not consistent with this section [i.e., section 209]" of the CAA.²²

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 criteria, EPA has confirmed that it would similarly interpret sections 209(b) and (e) where the language is similar.²³

One deviation in the language is that CAA section 209(e)(2) requires the Administrator to consider consistency with "this section"—i.e., section 209—rather than 202(a). In its *209(e) Final Rule*, EPA interpreted this provision to mean that those challenging a California authorization request must show that the State's program and accompanying enforcement provisions are not consistent with sections 209(a),

²² 82 Fed. Reg. 6,525, 6,256 (Jan. 19, 2017).

²³ *Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards (Final 209(e) Rule)*, 59 Fed. Reg. 36,969 (July 20, 1994), Decision Document accompanying 60 Fed. Reg. 37,440 (July 20, 1995) at p. 11; 65 Fed. Reg. 69,763, 69,764 (Nov. 20, 2000).

209(e)(1), and 209(b)(1)(C)—the latter of which concerns consistency with CAA section 202(a).²⁴

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 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]...."²⁵

Consistency with section 202(a) "relates in relevant part to technological feasibility and to federal certification requirements."²⁶ "The 'technological feasibility' component of section 202(a) obligates California to allow sufficient lead time to permit manufacturers to develop and apply the necessary technology."²⁷ "The federal certification component ensures that the Federal and California test procedures do not 'impose inconsistent certification requirements.'"²⁸

Thus, 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 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."²⁹ Under this long-standing interpretation, California's program is consistent with Section 202(a) if it allows "sufficient lead time to permit manufacturers

²⁴ 59 Fed. Reg. 36,969, 36,983 (July 20, 1994).

²⁵ 65 Fed. Reg. 69,763, 69,764 fn. 5 (Nov. 20, 2000).

²⁶ *Motor & Equip. Mfrs. Ass'n v. Nichols (MEMA II)*, 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)).

²⁷ *Id.*

²⁸ *Id.* (quoting 46 Fed. Reg. 26,371, 26,372 (May 12, 1981)).

²⁹ 49 Fed. Reg. 18,887, 18,892 (May 3, 1984) (citation omitted).

to develop and apply the necessary technology.”³⁰ “Neither the court nor the agency has ever interpreted compliance with section 202(a) to require more.”³¹

It is also well established that in deciding whether to grant an authorization, EPA may only consider the three aforementioned criteria set forth in section 209(e)(2), that EPA shall give substantial deference to California’s policy judgments, and that the burden is on those who oppose the granting of the authorization to show why it should not be granted.³² This is consistent with the statutory text. It has long been EPA’s approach and has been upheld by the D.C. Circuit and ratified by Congress.³³

V. THE 2022 AMENDMENTS MEET THE CRITERIA FOR A NEW AUTHORIZATION

CARB submits that for the reasons set forth below, and in the documents associated with the 2022 Amendments’ rulemaking action, the Administrator must grant California a new authorization, as EPA has no basis under the criteria of CAA section 209(e)(2) to deny California’s request.

A. Protectiveness

Section 209(e)(2)(A)(i) mirrors Section 209(b)(1)(A), and allows EPA to deny California an authorization for its revised nonroad vehicle or engine emission program if the State’s “determin[ation] that California standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards” is arbitrary and capricious.³⁴ As with emission standards for new on-road motor vehicles and engines, California evaluates the protectiveness of its nonroad emission standards “in the aggregate,” assessing whether the State’s standards, as a whole regulatory program, are at least as protective as EPA’s standards. That assessment also occurs against the backdrop of prior grants of authorization in which California determined, and EPA affirmed, that California’s existing nonroad emissions program is at least as

³⁰ MEMA II 142 F.3d at 463.

³¹ *Id.* See also Decision Document accompanying 61 Fed. Reg. 53,371 (Oct. 11, 1996) at p.2. Even where there is incompatibility between the California and federal test procedures, EPA has granted a waiver under circumstances where EPA accepts a demonstration of federal compliance based on California test results, thus obviating the need for two separate tests. 43 Fed. Reg. 1,829, 1,830 (Jan. 12, 1978); 40 Fed. Reg. 30,311, 30,314 (July 18, 1975).

³² *Motor and Equipment Manufacturers Association v. EPA* (MEMA I) 627 F.2d 1095, 1121 (D.C. Cir. 1979); 40 Fed. Reg. 23,102, 23,103-23,104 (May 28, 1975); Decision document accompanying 58 Fed. Reg. 4,166 (Jan. 7, 1993), at p.20; 82 Fed. Reg. 6,500, 6,502 (Jan. 19, 2017).

³³ 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).

³⁴ 42 U.S.C. § 7543(e)(2)(A)(i).

protective as EPA's.³⁵ California's protectiveness determination accordingly focuses on whether the new or amended standards for which it seeks authorization would alter the protectiveness of the State's nonroad emissions control program—that is, whether the new or amended standards would cause the State's standards "in the aggregate" to become less protective than EPA's.³⁶

In adopting the 2022 Amendments, the Board approved³⁷ Resolution 22-19 (Enclosure 4), in which it expressly declared:

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

EPA has no basis to find that the Board's determination is arbitrary and capricious.

As discussed in Section III.B, the changes to the program in the 2022 Amendments that allow fleet owners to comply with the fleet-average emissions target by equipping their vehicles with engines certified to California or federal Final Tier 4 off-road engine standards, do not undermine the relative protectiveness of California's standards in the aggregate, because the California Final Tier 4 off-road engine standards are essentially aligned with the federal Final Tier 4 off-road engine standards.³⁸ Similarly, the changes to the program in the 2022 Amendments that allow fleet owners to comply with the fleet-average emissions target by equipping their vehicles with 2007 or newer model year engines certified to California's on-road engine standards, do not undermine the relative protectiveness of California's standards in the aggregate, because those standards are at least as protective of the public health and welfare as applicable federal standards.³⁹

Furthermore, the elements of the 2022 Amendments that establish emissions standards and other requirements for in-use off-road engines are unquestionably more protective of public health and welfare than applicable federal requirements and thus cannot undermine the protectiveness of California's program. The 2022 Amendments establish emission standards for in-use off-road engines that are

³⁵ *E.g.*, 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."); 70 Fed. Reg. 50,322, 50,323 (Aug. 26, 2005).

³⁶ 68 Fed. Reg. 65,702, 65,704 (Nov. 21, 2003) ("[T]he various amendments will not cause the California nonroad standards, in the aggregate, to be less protective of public health and welfare than the applicable Federal standards."); 75 Fed. Reg. 8,056, 8,059 (Feb. 23, 2010) (same).

³⁷ The Board's finding was reaffirmed by the Executive Officer in Executive Order R-23-001, dated June 15, 2023.

³⁸ The Administrator has previously determined that CARB's Final Tier 4 off-road CI engine emission standards and related test procedures would not cause California's "nonroad emission standards, in the aggregate, to be less protective of public health and welfare than applicable Federal standards." 75 Fed. Reg. 8,056, 8,059 (Feb. 23, 2010).

³⁹ 70 Fed. Reg. 50,322, 50,323 (Aug. 26, 2005).

individually and collectively more stringent than the preexisting In-Use Off-Road Regulation's emissions standards (and for which EPA determined it had no basis for finding the Board's determination of protectiveness was arbitrary and capricious),⁴⁰ and given that EPA is not authorized by the CAA to adopt standards and other requirements related to emission control for in-use engines.⁴¹

Likewise, the element of the 2022 Amendments that establishes the zero-emission compliance flexibility provisions is indisputably more protective than comparable federal requirements, as it establishes emissions standards requiring new off-road engines to emit *no emissions* of air pollutants. There are simply no comparable federal zero-emission standards for non-road engines.

Consequently, the establishment of additional and more stringent emissions-related requirements for both in-use and new off-road engines cannot render California's off-road emissions control program to be less protective than the federal nonroad emissions control program, and CARB's determination of protectiveness is accordingly well-founded.^{42, 43}

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, and nonroad engine and equipment emissions control programs. 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 a separate new motor vehicle and nonroad engine and equipment emissions control program, respectively, to meet compelling and extraordinary conditions, and not whether any given standard is necessary to meet such conditions.⁴⁴ EPA has expressed this as an inquiry into “the existence of ‘compelling and extraordinary’ conditions” of the kind for which a

⁴⁰ 78 Fed. Reg. 58,090, 58,095 (Sept. 20, 2013).

⁴¹ 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.

⁴² “California standards may be most clearly ‘at least as protective’ when they are compared to the absence of Federal emission standards.” 74 Fed. Reg. 32,744, 32,755 (Aug. 26, 2005).

⁴³ 80 Fed. Reg. at 76,689 (“[I]t is clear that California's standards are at least as protective of public health and welfare as applicable federal standards, especially since there are no federally applicable standards to regulate in-use nonroad engines.”).

⁴⁴ 87 Fed. Reg. 35,767 (June 13, 2022); 80 Fed. Reg. 76,689 (Dec. 18, 2013).

separate state program of controls remains warranted.⁴⁵ In other words, “review ... under section 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.”⁴⁶

California continues to experience some of the worst air quality in the nation and the South Coast and San Joaquin Valley Air Basins, in particular, continue to be in extreme non-attainment with National Ambient Air Quality Standards (NAAQS) for ozone and in serious non-attainment with NAAQS for particulate matter.⁴⁷

Furthermore, California continues to face challenges in attaining compliance with the NAAQS for ozone for several areas throughout the State. Seventeen areas in California are designated as nonattainment for ozone, and of those, nine areas are classified as Moderate and above the 70 parts per billion (ppb) ozone standard.⁴⁸ Despite California’s extensive statewide efforts to reduce air pollution, communities located near ports, rail yards, warehouses, and freeways, continue to experience a higher burden of air pollution than other areas due to the cumulative impact of multiple sources of pollution.⁴⁹

California needs its own nonroad engine and vehicle emissions control program to meet extraordinarily severe air pollution problems in the State. In adopting Resolution 22-19, CARB found that “California continues to face unique air quality goals and challenges statewide[,]” and that “[t]he vehicles that would be subject to the [2022] Amendments are a significant source of NO_x statewide that needs to be controlled and reduced to meet CARB’s air quality mandates and goals[.]”⁵⁰ The Board also found that the 2022 Amendments “are necessary to achieve additional criteria emissions reductions in order to meet California’s SIP targets and attain the NAAQS in California[.]”⁵¹

In the California Clean Air Act of 1988, the California Legislature found that:

[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

⁴⁵ 40 Fed. Reg. 23,103 (May 28, 1975); 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.”).

⁴⁶ 44 Fed. Reg. 38,660, 38,661 (July 2, 1979).

⁴⁷ 78 Fed. Reg. 2,112, 2,130 (Jan. 9, 2013); 82 Fed. Reg. 4,867, 4,871 (Jan. 17, 2017).

⁴⁸ ISOR at 38, 40.

⁴⁹ *Id.* at 135.

⁵⁰ Resolution 22-19, at 8, 9.

⁵¹ *Id.*

only to prevent attainment of the state standards, but in some cases, to result in worsening of air quality.⁵²

In response to the undisputed severe air quality problems in California, the California Legislature authorized CARB to consider adopting, *inter alia*, standards and regulations for nonroad engines.⁵³ Given the serious air pollution problems California faces and the resultant need to achieve the maximum reductions in emissions, it is necessary to develop emission controls for nonroad sources.⁵⁴ 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 nonroad engines.

The Administrator has repeatedly agreed with CARB that California's continuing extraordinary conditions justify a separate California nonroad emission control program.⁵⁵ 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 California's need for its own nonroad engine and equipment emissions control program.

2. Alternative Interpretation of the Compelling and Extraordinary Criterion

Even if EPA applies a narrower, standards-specific inquiry (as some authorization opponents may argue is required), the record demonstrates that California "needs" the requirements of the 2022 Amendments to address compelling and extraordinary conditions in California.

As discussed in Section III and in the ISOR and as confirmed by CARB's findings in Resolution 22-19, the off-road diesel vehicles regulated by the 2022 Amendments are a significant source of fine PM and NOx emissions statewide.⁵⁶ These vehicles emitted approximately 7 percent of statewide PM emissions and 14 percent of statewide NOx emissions, in 2022.⁵⁷

The 2022 Amendments are a critical component of CARB's 2022 State Strategy for the State Implementation Plan⁵⁸ and will help CARB achieve emissions reductions necessary to protect communities from toxic emissions from off-road diesel equipment.⁵⁹ These emissions reductions will reduce premature deaths,

⁵² Health & Saf. Code § 43000.5.

⁵³ Health & Saf. Code §§ 43013 and 43018.

⁵⁴ See Health & Saf. Code §§ 41750, 41754, 43000.5, 43013 and 43018.

⁵⁵ 60 Fed. Reg. 37,440 (July 20, 1995); 61 Fed. Reg. 69,093 (Dec. 31, 1996); 71 Fed. Reg. 29,623 (May 23, 2006); 76 Fed. Reg. 77,521 (Dec. 13, 2011).

⁵⁶ ISOR at 38; Resolution 22-19 at 9.

⁵⁷ ISOR at 9.

⁵⁸ CARB, 2022 State Strategy for the State Implementation Plan (Sept. 22, 2022) https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf.

⁵⁹ ISOR at 37, 46.

cardiopulmonary mortality, hospital admissions for cardiovascular and respiratory illnesses, and Emergency Room visits for asthma in California.⁶⁰ EPA has consistently found that California “needs” emissions standards to address the compelling and extraordinary conditions resulting from criteria pollutants described above,⁶¹ and therefore has no basis to find that the 2022 Amendments do not satisfy the “compelling and extraordinary” criterion.

C. Consistency with CAA Section 209

As previously stated, the Administrator has previously found that CAA section 209(e)(2) requires consistency with several subsections of section 209; that is, the Administrator has considered 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 also be consistent with sections 209(a), 209(e)(1), and 209(b)(1)(C).⁶²

1. Consistency with CAA Sections 209(a) and 209(e)(1)

The 2022 Amendments are consistent with section 209(a), which preempts states and political subdivisions from adopting or attempting to enforce any emission standard for new motor vehicles or new motor vehicle engines. The emissions standards for in-use diesel-fueled fleets are consistent with CAA section 209(a) because those standards primarily establish requirements applicable to in-use diesel-fueled nonroad engines and nonroad vehicles, and to the limited extent that the 2022 Amendments establish requirements for on-road motor vehicles or on-road motor vehicle engines, such regulated motor vehicles and motor vehicle engines are not new.⁶³

The 2022 Amendments are also 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 2022 Amendments do not establish any emissions standards or other requirements for locomotives, locomotive engines, or farm or construction equipment of any power size and are therefore not inconsistent with section 209(e)(1).

⁶⁰ ISOR at 12.

⁶¹ 53 Fed. Reg. 7,022 (Mar. 4, 1988); 55 Fed. Reg. 43,029, 43,031 (Oct. 25, 1990); 69 Fed. Reg. 60,995 (Oct. 14, 2004); 79 Fed. Reg. 46,256, 46,261-262 (Aug. 7, 2014); 84 Fed. Reg. 51,344, 51,346 (Sept. 27, 2019).

⁶² Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards (“Section 209(e) Rule”), 59 Fed. Reg. 36,969, 36,983 (July 20, 1994).

⁶³ CAA section 216(3) defines a “new motor vehicle”, in pertinent part, as “a motor vehicle, the equitable or legal title to which has never been transferred to an ultimate purchaser,” and defines a “new motor vehicle engine” in pertinent part as “an engine in a new motor vehicle or a motor vehicle engine the legal or equitable title to which has never been transferred to an ultimate purchaser.”

2. Consistency 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 the additional or amended standards would render California's program inconsistent with section 202(a) of the CAA. As discussed above in Section IV., "[t]he 'technological feasibility' component of section 202(a) obligates California to allow sufficient lead time to permit manufacturers to develop and apply the necessary technology."⁶⁴

Section 202(a) accordingly requires EPA to determine if the technology needed to comply with the requirements presently exists, and if it does not, whether there is adequate time to develop and apply the technology before the standards go into effect. The latter scenario also requires EPA to determine whether the cost of developing and applying the technology within that timeframe is feasible.⁶⁵

As demonstrated below, the requirements of the 2022 Amendments introduce no issues regarding technical feasibility or lead times for California's nonroad emissions program.

3. Technical Feasibility of the 2022 Off-Road Amendments

a. Tier Phase-out Requirement

The requirement that fleets no longer operate vehicles with Tier 0, 1, or 2 off-road engines and specified MYs of on-road engines in California after specified dates and based on fleet size presents no issues of technical feasibility or lead time because the technologies needed to comply with the requirement exist and are readily available. Tier 3 engines have been available since the 2006 model year, Tier 4 Interim engines

⁶⁴ *Motor & Equip. Mfrs. Ass'n v. Nichols*, 142 F.3d 449, 463 (D.C. Cir. 1998) (MEMA II), (quoting *Ford Motor Co. v. EPA*, 606 F.2d 1293, 1296 n. 17 (D.C.Cir.1979).).

⁶⁵ 82 Fed. Reg. 6,500, 6,505 (Jan. 19, 2017); 76 Fed. Reg. 77,521, 77,526 (Dec. 13, 2011) 49 Fed. Reg. 1,887, 1,895 (May 3, 1984); 43 Fed. Reg. 32,182, 32,183 (July 25, 1978); 41 Fed. Reg. 44,209, 44,213 (Oct. 7, 1976).

have been available for more than a decade, and Tier 4 Final engines have been manufactured since 2014.⁶⁶

To the extent that fleets elect to comply with the Tier Phase-Out requirement by powering vehicles with on-road engines, compliant on-road engines have been manufactured since the 2007 model year⁶⁷.

b. Expansion of the Vehicle Adding Requirement

The requirement that any vehicle added to a fleet be equipped with a cleaner, higher-tier engine is clearly technologically feasible since, as discussed above in Section V.C.3a, Tier 4 Final off-road engines have been manufactured since 2014; furthermore, compliant on-road engines have been manufactured since the 2007 model year.

c. Optional Zero Emission Compliance Flexibility

The two zero-emission flexibility provisions are designed to encourage the use of off-road ZEVs and present no issues of technical feasibility or lead time. These provisions provide voluntary compliance flexibility options and do not impose any requirements on fleets.⁶⁸ Moreover, there are presently several off-road equipment categories, such as forklifts and airport ground support equipment, that have found success with zero-emission operations due to their unique environmental needs and duty cycles.

Among vehicles and equipment reported to CARB for compliance with CARB's in-use regulations for diesel and large-spark-ignited off-road equipment, about 17 percent of forklifts and 33 percent of airport ground support equipment (GSE) are already zero-emission equipment. Certain fleets plan to go even further. The two busiest airports in California, Los Angeles International Airport (LAX) and San Francisco International Airport (SFO), for example, have ambitious programs to increase their use of zero-emission ground support equipment. LAX, where 32 percent of GSE are

⁶⁶ To the extent that fleets elect to comply with this requirement by purchasing new off-road engines certified to California or federal Tier 4 Final standards, no issue of technical feasibility exist. The California Tier 4 Final standards are essentially aligned with the federal Tier 4 Final standards, and EPA fully considered the technological feasibility and economic costs associated with the federal Tier 4 Final standards in its rulemaking action promulgating those standards, 75 Fed. Reg. 8,056, 8,057 (Feb. 23, 2010), and EPA has determined that the California Tier 4 off-road standards are not technologically infeasible or inconsistent with federal certification requirements, within the meaning of section 202(a). *Id.* at 8060; § 2423; Code of Fed. Regs., tit. 40, Part 89, Subpart B, and Part 1039, Subpart B.

⁶⁷ See 40 C.F.R. 86.007-11 for on-road engine standards for 2007 and later MYs. EPA granted California a waiver for the States' new motor vehicle emissions control program, in light of CARB's adoption of emissions standards and accompanying enforcement procedures for 2007 and subsequent model year medium- and heavy-duty engines in 2005. 70 Fed. Reg. 50322 (Aug. 26, 2005).

⁶⁸ MEMA I, 627 F.2d at 1132 (a regulatory compliance option is only a mandate that can result in a denial of a waiver if the regulation does not specify another technologically feasible compliance option.).

already powered by electricity as of September 2022,⁶⁹ plans to increase that percentage to about 75 percent by 2031.⁷⁰ SFO, in their 2020 Executive Summary Report, indicated that already, 34% of their GSE were powered by electricity, with a goal to reach 100 percent electric by 2040.⁷¹ In the California off-road sector, zero-emission technology is rapidly growing with the support of CARB's extensive zero-emission policies and programs. Recent investments in the development and demonstration of heavier and more specialized zero-emission off-road vehicles and equipment have resulted in a growing list of commercial products in the off-road sector.⁷² Additionally, CARB's Long-Term Heavy-Duty Investment Strategy saw a significant expansion of off-road platforms in its technology readiness analysis with 13 new platforms and an additional 107 models evaluated in 2023 compared to 2022, mainly in the construction and cargo handling segments.⁷³

4. Consideration of Costs

CARB appropriately considered the costs of the 2022 Amendments by estimating the costs of compliance associated with the 2022 Amendments for fleets of different sizes, and fleets operated by state and federal government. CARB also considered RD costs and costs of compliance for prime contractors. In its analysis, CARB considered direct incremental costs—vehicle capital costs, off-road diesel vehicle Tier 4 final maintenance costs, and administrative costs for reporting and review of fleet certificates associated with the public works awarding bodies and prime contractors provisions. As demonstrated in the economic and fiscal impact analysis in the FSOR 399 Attachment (Enclosure 11), costs to fleets are higher in the earlier years of the 2022 Amendments and reduced in later years.⁷⁴ A typical ultra-small fleet⁷⁵ would see an increased incremental cost of \$35,906 from the 2022 Amendments during the analysis period from 2023-2038.⁷⁶ In that same time period, a typical small fleet

⁶⁹ Los Angeles World Airports press release. September 23, 2022. <https://www.lawa.org/news-releases/2022/news-release-063#:~:text=At%20present%2C%2032%25%20of%20ground,metric%20tons%20of%20carbon%20emissions>.

⁷⁰ Los Angeles World Airports Sustainability Action Plan. 2019. https://cloud1lawa.app.box.com/s/63i2teszgnld5aws68xbou6yc0inl5rp?utm_source=BenchmarkEmail&utm_campaign=09.01.2022_-_Press_Release%3a_Airport_Carbon_Accreditation_2022&utm_medium=emailSFO:

⁷¹ San Francisco Airport Zero-Emission Vehicle Readiness Roadmap & Intermodal Electrification Strategic Plan 2020 Executive Summary Report. 2020. https://www.flysfo.com/sites/default/files/ZEV_R_Summary.pdf.

⁷² California CORE eligible equipment catalog. 2023. <https://californiacore.org/equipmentcatalog/>

⁷³ CARB Long-Term Heavy-Duty Investment Strategy, Appendix D to the Proposed Fiscal Year 2023-24 Funding Plan for Clean Transportation Incentives. 2023. https://ww2.arb.ca.gov/sites/default/files/2023-10/fy2023-24lctfundingplan_appd.pdf

⁷⁴ FSOR 399 Attachment at 65.

⁷⁵ An ultra-small fleet is a subset of small fleets that have less than 500 total hp. The 2022 Amendments included some delayed compliance deadlines for these smallest fleets.

⁷⁶ FSOR 399 Attachment at 37.

would see an increased cost of \$2,351;⁷⁷ a typical medium fleet would see an increased cost of \$209,840;⁷⁸ and a typical large fleet would see an increased cost of \$338,002.⁷⁹

The total statewide valuation of avoided health outcomes of the 2022 Amendments from 2024 through 2038 is approximately \$5.73 billion.⁸⁰ The 2022 Amendments will benefit the health of not only people residing or working near where off-road diesel vehicles are operated but will also benefit the employees of the companies using vehicles subject to the Amendments as they are the ones most exposed to the emissions associated with operating these vehicles. These health benefits for employees would translate into reduced healthcare costs and reduced lost productivity from sickness associated with exposure to diesel emissions.⁸¹

The Administrator has long deferred to California's policy judgments, including judgments on costs, stating: "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 [a] decision under section 209" of the CAA.⁸² Based on the above reasons, the 2022 Amendments are feasible within the time provided for compliance, giving appropriate consideration to costs.

5. Consistency with Federal Test Procedures

The 2022 Amendments do not present issues of incompatibility between California and federal test procedures because they do not alter the test procedures specified for certifying federal or California in-use engines.⁸³ Engines are required to be certified to applicable non-road emission standards set by EPA or CARB for the engine family, under test procedures associated with those emission standards. Additionally, EPA does not have in-use standards and test procedures and lacks the authority to adopt such requirements.⁸⁴

VI. CONCLUSION

Based on the foregoing, CARB respectfully requests authorization for California to enforce the Off-Road regulation as amended by the 2022 Amendments.

⁷⁷ *Id.* at 44.

⁷⁸ *Id.* at 42.

⁷⁹ *Id.* at 40.

⁸⁰ *Id.* at 54.

⁸¹ SRIA at 34.

⁸² 36 Fed. Reg. 17,458 (Aug. 31, 1971); See also 40 Fed. Reg. 23,102, 23,104 (May 28, 1975); Decision document accompanying 58 Fed. Reg. 4166 (January 7, 1993) at p. 20 ["Since a balancing of these . . . costs against the potential benefits from reduced emissions is a central policy decision [of CARB in adopting the regulation].

⁸³ EPA has already determined that California and federal nonroad CI emissions standards and test procedures are not inconsistent. 75 Fed. Reg. 8,056, 8,060 (Feb. 23, 2010).

⁸⁴ CAA section 213; *EMA v. U.S. EPA*, 88 F.3d 1,075 (D.C. Cir. 1996).

CARB Contacts:

Technical questions or requests for additional technical information on this item should be directed to Johanna Levine, Staff Air Pollution Specialist, Mobile Source Control Division, at johanna.levine@arb.ca.gov. Legal questions should be directed to Anna Davtyan, Attorney, Office of Legal Affairs, at anna.davtyan@arb.ca.gov.

Enclosures:

The following documents pertaining to the amendments covered by this request are enclosed:

1. Notice of Public Hearing (Enclosure 1)
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/notice.pdf>
2. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, dated September 20, 2022 (Enclosure 2)
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/isor.pdf>
3. Appendices A-F to Staff Report (Enclosure 3)

Appendix A-1: Proposed Regulation Order
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appa-1.pdf>

Appendix B: Standardized Regulatory Impact Assessment (SRIA)
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appb.pdf>

Appendix B-1: Update to SRIA Appendix B
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appb-1.pdf>

Appendix C: Department of Finance Comments on the SRIA and CARB Responses
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appc.pdf>

Appendix D: Cost Survey and Aggregated Responses
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appd.pdf>

Appendix E: Aggregated AB 617 Emissions Data
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appe.pdf>

Appendix F: 2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory 15-day

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/appf.pdf>

4. Resolution 22-19 (Enclosure 4)
<https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2022/res22-19.pdf>
5. Notice of Public Availability of Modified Text and Availability of Additional Documents and Information, dated April 10, 2023 (Enclosure 5)
<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/ord15-daynotice.pdf>

Attachment A-1: Proposed 15-Day Changes to Proposed Regulation Order

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-road-diesel/ord15dayatta-1.pdf>

6. [Executive Order](#), dated June 15, 2023 (Enclosure 6)
7. [Final Statement of Reasons](#), dated June 7, 2023 (Enclosure 7)
8. [Updated Informative Digest](#), dated July 7, 2023 (Enclosure 8)
9. [Addendum to the Final Statement of Reasons](#), dated August 17, 2023 (Enclosure 9)
10. [Final Regulation Order](#), (Attachment A-1), dated August 18, 2023 (Enclosure 10)
11. FSOR 399 and Attachment (Enclosure 11)
12. Notice of Approval, August 18, 2023 (Enclosure 12)
13. Fully endorsed STD 400 face sheet as approved by OAL and filed with the Secretary of State, August 18, 2023 (Enclosure 13)
14. [Transcript](#), November 17, 2022 (Enclosure 14)