

State of California  
AIR RESOURCES BOARD

**PUBLIC HEARING TO CONSIDER THE PROPOSED AMENDMENTS TO THE  
AIRBORNE TOXIC CONTROL MEASURE FOR DIESEL PARTICULATE MATTER  
FROM PORTABLE ENGINES RATED AT 50 HORSEPOWER AND GREATER, AND  
TO THE STATEWIDE PORTABLE EQUIPMENT REGISTRATION PROGRAM  
REGULATION.**

**STAFF REPORT: INITIAL STATEMENT OF REASONS**



**DATE OF RELEASE: September 26, 2017**  
**SCHEDULED FOR CONSIDERATION: November 16 or 17, 2017**

Location:

**California Environmental Protection Agency  
Air Resources Board  
Byron Sher Auditorium  
1001 I Street  
Sacramento, California 95814**

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## LIST OF ACRONYMS

AB	Assembly Bill
ABT	Averaging, Banking, and Trading
AQIA	Air Quality Impact Analysis
ATCM	Airborne Toxic Control Measure
BACT	Best Available Control Technology
bhp	Brake-horsepower
CAA	Federal Clean Air Act
CAL/EPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB or Board	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGA	California Groundwater Association
CO	Carbon Monoxide
DMS	Data Management System
DPF	Diesel Particulate Filter
EA	Environmental Analysis
ECL	Emission Control Label
EIR	Environmental Impact Report
g/bhp-hr	Grams per Brake Horsepower-hour
GHG	Greenhouse Gas
HP	Horsepower
HSC	California Health and Safety Code
ISOR	Initial Statement of Reasons
IT	Information Technology
MACT	Maximum Achievable Control Technology
NO <sub>x</sub>	Oxides of Nitrogen
OCS	Outer Continental Shelf
OEHHA	Office of Environmental Health Hazard Assessment
OEM	Original Equipment Manufacturer
PEPS	Provider of Essential Public Service
PERP	Statewide Portable Equipment Registration Program
PM	Particulate Matter
PRC	California Public Resources Code
PSD	Prevention of Significant Deterioration
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SRIA	Standardized Regulatory Impact Analysis
SO <sub>x</sub>	Oxides of Sulfur
SRP	Scientific Review Panel
STW	State Territorial Waters
TACs	Toxic Air Contaminants
tpd	Tons per Day
TPEM	Transition Program for Equipment Manufacturers
TSE	Tactical Support Equipment
U.S. EPA	United States Environmental Protection Agency
VDECS	Verified Diesel Emissions Control Strategies
VOC	Volatile Organic Compounds

## **Acknowledgments**

This Staff Report was prepared with the assistance and support of many individuals within the California Air Resources Board. In addition, staff acknowledges the assistance and cooperation of many private individuals, organizations, and the California Air Pollution Control Officers Association whose contributions throughout the regulation development process have been invaluable.

## **EXECUTIVE SUMMARY**

The California Air Resources Board (CARB or Board) staff is proposing to amend the Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater (Portable Engine ATCM or ATCM) and the Statewide Portable Equipment Registration Program (PERP) Regulations (referred to as the PERP Regulation). The PERP Regulation comprises all the regulatory sections within title 13, chapter 9, article 5, section 2450, et seq., of the California Code of Regulations, and the ATCM is in title 17, section 93116 – 93116.5. As a technology-forcing regulation, the ATCM was designed to force the development of retrofit emissions control technologies and new engine technologies to meet regulatory requirements. Some of these technologies materialized, though not as early as anticipated. This has substantially increased the cost to regulated parties compared to the estimates at the time of ATCM adoption and, critically, means that the program as now structured will not produce public health benefits on the scale and timing intended because program participants will not be able to fully comply. The proposed amendments recapture these benefits by setting out a reasonable compliance timeline based on today's information on fleet economics and technology availability to provide a glide path that will ensure compliance. Staff is also proposing to amend the PERP Regulation to harmonize with the ATCM changes and to improve the implementation and enforceability of the Portable Equipment Registration Program. Together, the amendments to the Portable Engine ATCM and to the PERP Regulation will be referred to as the Portable Regulatory Amendments throughout this document.

### **Background on the PERP Regulation and the Portable Engine ATCM**

In 1995, State law (California Health and Safety Code (HSC) §§ 41750 through 41755) required CARB to establish a uniform statewide program for the voluntary registration and regulation of portable engines and equipment units in California, and it provided the CARB authority to collect fees to cover administration and enforcement of the program (HSC § 47152). In 1997, CARB adopted the PERP Regulation which defined the equipment allowed to register in PERP, set operational limits for registered equipment, established registration procedures, and set registration fees.

PERP provides an alternative to portable equipment owners that operate in multiple air districts. Absent a uniform statewide program, equipment owners must obtain an operating permit from each air district in which the engine or equipment unit was to operate, potentially leading to multiple permits for one piece of equipment. Under PERP, only engines meeting the most current federal tier of emission standards for new nonroad engines are eligible for initial engine registration, with certain exceptions. The PERP Regulation defines the equipment eligible to register in PERP, sets operational limits for registered equipment, and establishes registration procedures. Because local air pollution control and air quality management districts (districts or local air districts) enforce PERP registration requirements, a portion of the fees is distributed to the local air districts for these enforcement activities.

CARB adopted the ATCM in 2004 as part of a broad initiative, called the Diesel Risk Reduction Plan, to control diesel particulate emissions from many diesel engines to

protect public health. The ATCM prohibits operating older portable engines that emit higher levels of air pollutants than newer engines, and sets strict engine eligibility for portable engines registering in PERP, limits districts to permitting only engines certified to meet federal emission standards, and requires all fleets to meet fleet emission standards.

The implementation of the ATCM requirements for those engines registered in PERP is carried out by CARB while the local air districts implement the ATCM requirements through their permitting programs. The ATCM and the PERP operate as one uniform statewide program. Changes made to the ATCM are reflected in the PERP Regulation, where applicable, to harmonize the two regulations. Whether registered in PERP, or permitted by the air districts, all regulated portable engines are affected by the changes proposed here.

### **Reason for Amendments**

Industry cannot meet the emission standards on the schedule adopted under the current Portable Engine ATCM. The Portable Engine ATCM is a technology forcing regulation. When CARB adopted the ATCM in 2004 the rulemaking relied on several assumptions about the development of new technologies to meet stringent fleet emission standards. Cost estimates presumed an abundance of Tier 4 engines would be available for fleet owners to purchase at reasonable prices through their normal equipment purchasing patterns well before the emissions standards were required, and remaining engines could be retrofit with verified diesel emissions control strategies (VDECS) to comply with the standards. Unfortunately, the costs have turned out to be much higher than anticipated for the following reasons:

- Lack of available retrofit technologies.

The current ATCM was written with the assumption that CARB verified diesel emission control strategies, such as retrofit diesel particulate filters (DPFs), would be manufactured and sold for the off-road portable engines market. The installation of a retrofit was intended to be the lowest cost compliance option. While VDECS were manufactured for on-highway and off-road applications, very few were specifically verified for portable applications and as a result today only 7 engines out of approximately 30,000 registered engines in PERP have been retrofitted. Therefore, the remaining older engines in portable fleets cannot be retrofitted as assumed when the ATCM was adopted.

- Repowers not feasible in most applications.

A higher cost compliance option would be to repower existing equipment with compliant engines. However, Tier 4 engines have a larger footprint than equivalent engines manufactured to higher emissions standards because of the presence of emissions after-treatment systems including DPFs. As a result, Tier 4 engines will not fit in most portable equipment packages designed for Tier 3 or older engines. This means that to comply fleets would need to purchase new equipment at a significantly greater, and in many instances prohibitive, cost.

- Federal provision in national emissions standards allowed manufacture of higher-emitting engines for longer than anticipated.

Tier 4 engines did not become available as early as anticipated due to flexibility provisions in the emissions standard. Off-road engines are certified to national and California standards. The federal emission standards for nonroad diesel engines are established in advancing tiers that progressively become more stringent (i.e., the higher the tier, the lower the emissions). Currently, the most stringent is Tier 4. These standards provide flexibility options through the Transition Program for Equipment Manufacturers, (TPEM or flexibility program). Under TPEM, equipment manufacturers may delay manufacturing engines that comply with Tier 4 standards for up to seven years if they comply with certain production limitations and requirements for notification, recordkeeping, and annual reporting.

The ATCM recognized this may occur and allows registration of TPEM engines sold as Tier 4 and manufactured to Tier 3 standards, but underestimated the impact to compliance. Because of the higher cost of Tier 4 engines, the cost to redesign the equipment to accommodate the larger Tier 4 footprint, and because portable equipment is manufactured in relatively small volumes, a large number of TPEM engines manufactured to Tier 3 standards were sold in portable applications. As a result, TPEM engines comprise approximately 18% of the PERP inventory.

As a result fleets purchased engines, through their regular purchasing patterns, that were available on the market but which do not comply with current emissions standards in 2017 and 2020. This means more engines in each fleet are not compliant with emissions standards and fleets must replace more equipment and prematurely than anticipated in 2004.

- High cost of compliant engines and equipment.

The purchase price of a Tier 4 engine is approximately twice the cost of a Tier 3 engine, and equipment must be redesigned to accommodate the larger footprint of a Tier 4 engine. These cost increases were not recognized in 2004.

- Tier 4 engines rated greater than 750 brake-horsepower (bhp) cannot meet ATCM standard in 2020.

Final Tier 4 non-generator engines rated greater than 750 bhp will not meet the 2020 ATCM fleet standard. The ATCM was written before the final Tier 4 emission standards were finalized, and staff expected that these engines would meet a standard of 0.02 grams of particulate matter per brake horsepower-hour (g/bhp-hr), the same as the 2020 Portable Engine ATCM fleet standard. After the ATCM was adopted, the emissions standard for non-generator off-road engines was revised to 0.03 g PM/bhp-hr. As a result, there is no compliance pathway for engines greater than 750 bhp used in non-generator applications.

In summary, the analysis in 2004 supporting the existing regulations assumed Tier 4 engines would become available and fleets would purchase these engines well before compliance dates. Any remaining engines could be retrofit with cost-effective emissions control technologies. Those assumptions have not proven out. Instead, retrofits are unavailable and repower is not an option, leaving equipment purchase as the only compliance pathway. Replacement equipment came to market later than anticipated. Therefore, fleets bought higher emitting equipment which must now be replaced to meet regulatory requirements. Replacement equipment with Tier 4 engines is much more expensive than anticipated. So overall, CARB projects that fleets would need to replace about 90% of their equipment with new equipment housing Tier 4 engines to meet the 2020 standard. CARB projects that only 10% of regulated fleets would be able to make the investments necessary to achieve this goal.

## **Proposed Amendments to the Portable Engine ATCM**

### *Staff Proposal*

To address the issues summarized above, CARB staff, in consultation with affected industry and the local air districts developed the proposed Portable Regulatory Amendments. The proposed amendments to the Portable Engine ATCM would restructure the current diesel PM emission reduction strategies in a way that is reasonably attained and expeditiously enforced. The amendments to the PERP Regulation are necessary to maintain consistency between regulatory requirements and registration practices. Overall, the amendments ensure the emissions reductions envisioned by the ATCM will be achieved, both by granting fleets time to make the necessary investments and by increasing the enforceability of the regulatory requirements.

The Proposed Regulatory Amendments will establish small and large fleets based on each individual fleet's cumulative horsepower. Small fleets will have to follow a tier phase-out schedule where specific tiered engines must be removed from service by certain years. Ninety percent of regulated fleets will qualify as small fleets which will have additional time to make investments to meet regulatory requirements. Large fleets will have the option to either follow a tier phase-out schedule or fleet average standards. Under the new requirements, if a fleet follows fleet average standards, then all of their engines must be registered in PERP, and enforcement can be handled directly through the registration program. District field enforcement efforts will be focused on ensuring all portable equipment are permitted by a local district where required, or registered with the State.

Additional amendments include: 1) providing credits to those few fleets that would have met the 2017 fleet average emission standards; 2) granting incentives to fleet owners for retiring older tier engines before their phase-out dates; 3) adding a definition for and exempting agricultural engines; 4) clarifying the emergency event engines exemption; 5) adding a definition and exemption for engines on all 2-engine vehicles; (6) revising the recordkeeping and reporting requirements for emergency use and low use engines; (7) adding sales disclosure and prohibition of sale requirements; (8) increasing registration fees; and (9) removing obsolete language.

### *Evaluation of Regulatory Alternatives*

Staff analyzed several alternatives to the Proposed Amendments, which were finalized during the public process into the following two: (1) 18 Year Equipment Life with Relaxed Fleet Average Standards; and (2) Tiers 1-3 Phase-Out by 2025.

In evaluating these alternatives, staff found that none were as, or more, effective than implementing the proposal for achieving the emission reductions in a most expeditious and cost-effective manner. Staff balanced the need to maintain the environmental integrity of the current Portable Engine ATCM while providing economic relief to regulated entities.

### *Environmental Assessment*

Staff analyzed the environmental impacts of the Portable Regulatory Amendments consistent with the California Environmental Quality Act (CEQA). The details of the analysis are listed in Appendix J and they are summarized in the Environmental Analysis (EA) section of this document (Chapter IV). The EA provides a single coordinated programmatic environmental analysis of an illustrative, reasonably foreseeable compliance scenario that could result from implementation of the proposed amendments to the Portable Engine ATCM and the PERP Regulation. Overall, there are no significant adverse impacts associated with the portable regulatory amendments. This is described in greater detail in Chapter IV.

### *Economic Assessment*

Staff conducted an economic analysis of the Portable Regulatory Amendments and of two alternatives. The amendments result in a cost-savings to industry of about \$233 million between 2017 and 2030. Equipment replacement is more costly under the current regulation with potential penalty fines resulting from non-compliance, while the Portable Regulatory Amendments allow for additional time for fleets to come into compliance, thus avoiding penalties. This is explained in more detail in the Economic Impacts Analysis of this document (Chapter VI).

### **Staff Recommendation**

Staff recommends the Board adopt the Portable Regulatory Amendments. The amendments are necessary because assumptions that staff made when the ATCM was originally adopted were not fully realized, and as a result the current ATCM is financially and, in some cases, technologically infeasible. The emission reductions previously anticipated are not expected to be realized. The amendments ensure the emissions reductions envisioned when the ATCM was originally adopted will be achieved by providing fleets and other participants in the industry, including equipment manufacturers, additional time to make necessary investments. The amendments also improve enforceability and clarify regulatory requirements.

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## **I. INTRODUCTION AND BACKGROUND**

This Staff Report presents CARB staff's rationale for the proposed Portable Regulatory Amendments. This introduction describes the background of the regulations and the type of equipment registered in PERP.

### **A. PERP Regulation**

California Health and Safety Code (HSC) §§ 41750 through 41755 mandates CARB to adopt a regulation to establish a uniform statewide program for the registration and regulation of portable engines. In developing these regulations, CARB must evaluate emissions, identify emission control technologies, hold public hearings, establish emission limits and control requirements, and develop a fee schedule to cover the costs to adopt and administer the program, including the cost of district enforcement. HSC § 41752(e) specifies that the Board may periodically revise and update the registration regulations including, but not limited to, revising and updating the determination of best available control technology for portable engines.

The Board originally approved the Statewide PERP Regulation on March 27, 1997, and subsequently amended it on December 10, 1998, February 26, 2004, June 22, 2006, March 22, 2007, December 11, 2008, and January 28, 2010. The Statewide PERP Regulation provided a uniform, voluntary program for the registration and regulation of portable engines and equipment units operating in California. PERP was created at the request of affected industry as an alternative to the varying portable equipment permitting requirements at the 35 individual local air districts. Once registered in PERP, portable engines and equipment units can operate throughout the state without having to obtain multiple permits from districts. The districts, with CARB, are responsible under State law for enforcing the PERP Regulation. Under PERP and the Portable Engine ATCM, only the most current tier engines, and engines manufactured under the flexibility provisions (flex engines), are eligible for initial registration. This requirement does not apply to auxiliary engines on water well drilling rigs, dedicated snow removal vehicles, cranes, privately owned sweepers, and marine vessels.

### **B. Portable Engine ATCM**

California suffers from significant air pollution due in part to its geography coupled with its concentrated population in various locations. Because of this, CARB has passed numerous regulations to curtail air pollution. The Portable Engine ATCM was one such regulation meant to aggressively reduce diesel particulates from portable diesel engines operated at various locations throughout the state.

CARB adopted the Portable Engine ATCM on February 26, 2004 as part of CARB's Diesel Risk Reduction Plan to reduce the emissions of diesel PM from diesel-fueled portable engines that are 50 horsepower and higher. The regulation was subsequently amended on March 22, 2007, December 11, 2008 and January 28, 2010. The Portable Engine ATCM establishes requirements for both the registration of diesel engines with CARB and the permitting of diesel engines by the districts.

The goal of the Portable Engine ATCM is to reduce the health risks associated with diesel PM emitted from portable engines. The Portable Engine ATCM promotes the use of clean portable engines in California. All portable engine fleets are required to meet fleet averaging standards separated into three horsepower categories. These standards became progressively more stringent starting in 2013, continuing in 2017, and culminating in 2020. When these standards were established, staff relied upon predictions of forthcoming technologies to meet regulatory requirements being available by certain dates. The challenge was predicting when such technologies would become available, and at what cost.

### **C. Authority for PERP and the Portable Engine ATCM**

The Federal Clean Air Act (CAA) Amendments of 1990 authorized the United States Environmental Protection Agency (U.S. EPA) to regulate new nonroad engines. The amendments preempted states from adopting emission standards or other requirements for nonroad engines (CAA, § 209(e)). However, recognizing the special circumstances confronting California's challenging air pollution conditions shown by its continued failure of attaining the ozone and fine particulate matter National Ambient Air Quality Standards, Congress provided that the State of California, upon receiving authorization from the U.S. EPA, can adopt and enforce standards for most classes and categories of off-road engines. In California statute, nonroad engines are referred to as off-road engines. Portable engines are a subset of off-road engines.

The U.S. EPA has granted CARB authorizations for all its PERP and ATCM regulations amendments. (See 77 Federal Register 72851 (December 6, 2012) [withdrawing request for authorization of initial PERP regulations, and 1998 and 2005 amendments, and granting authorization for 2007 regulations]; 77 Federal Register 72846 (December 6, 2012) [authorization for 2004 ATCM amendments]; 80 Federal Register 76685 (December 10, 2015) [within-the-scope of previous authorization determination for 2007, 2009, and certain 2010 PERP and ATCM amendments]; 80 Federal Register 76685 (December 10, 2015) [authorization for new 2010 PERP and ATCM requirements].)

Federal preemption prevents all states, including California, from setting standards for new nonroad engines less than 175 horsepower that are used in farm and construction operations. However, states maintain the authority to establish in-use restrictions such as limiting the hours of operation. The Portable Regulatory Amendments continue to place compliance obligations on all fleets as they build upon the Portable Engine ATCM and the PERP Regulation currently in place, including all previous amendments approved by the Board. The Portable Regulatory Amendments are not more stringent than the current regulations. In 2007, in its authorization request for the 2007 PERP amendments, CARB argued that PERP did not require authorization from U.S. EPA because it is voluntary, but requested authorization in an abundance of caution. In granting that request, EPA did not determine whether PERP needed authorization.

Several sections of the California Health & Safety Code (HSC) provide CARB with authority to adopt the proposed Portable Engine ATCM. HSC §§ 39600 (General Powers) and 39601 (Standards, Definitions, Rules, and Measures) confer to CARB the

general authority and obligation to adopt rules and measures to execute the Board's powers and duties imposed by State law. In addition, HSC §§ 43013 and 43018(a) provide broad authority to achieve the maximum feasible and cost-effective emission reductions from all mobile source categories, including both on-highway and off-road diesel engines. Regarding in-use motor vehicles, HSC §§ 43600 and 43701(b) respectively grant CARB authority to adopt emission standards and emission control equipment requirements.

California's Air Toxics Program, established under California law by Assembly Bill (AB) 1807 (Stats. 1983, Ch. 1047), and set forth in HSC §§ 39650 through 39675, mandates the identification and control of air toxics in California. The identification phase of the Air Toxics Program requires CARB, with participation of other state agencies, such as the Office of Environmental Health Hazard Assessment (OEHHA), to evaluate the health impacts of and exposure to substances and to identify those substances that pose the greatest health threat as toxic air contaminants (TACs). CARB's evaluation is provided to the public and is formally reviewed by the Scientific Review Panel (SRP), established under HSC § 39670. Following CARB's evaluation and the SRP's review, the Air Resources Board may formally identify a TAC at a public hearing. Following the identification of a substance as a TAC, HSC §§ 39658 and 39665 require CARB, with the participation of the air districts, and in consultation with affected sources and interested parties, to prepare a report on the need and appropriate degree of regulation for that substance (risk management phase).

In 1998, CARB identified diesel PM as a TAC, and in September 2000, adopted the Diesel Risk Reduction Plan. The Diesel Risk Reduction Plan was the first formal product of the risk management phase and serves as the needs assessment under the AB 1807 process. In the Diesel Risk Reduction Plan, CARB identified options to reduce diesel PM and the recommended control measures to achieve reductions, including a measure to reduce diesel PM from diesel-fueled portable engines.

This Portable Engine ATCM fulfills the goals of the Diesel Risk Reduction Plan and complies with the requirements of HSC §§ 39666 and 39669.5 to prevent an endangerment to public health.

## **1. Summary of Portable Equipment Use and Activities**

Portable equipment is any piston-driven internal combustion engine or equipment unit designed and capable of being carried or moved from one location to another and would remain at a single location for less than 12 consecutive months. Unlike stationary engines or equipment, portable equipment may be moved to several locations throughout the State, where it may operate for several hours or several months. Portable engines and equipment units registered in PERP are used for many applications, such as water pumps, military tactical support equipment, cranes, oil well drilling, servicing and work-over rigs, power generators, dredging equipment, rock crushing and screening equipment, welding equipment, wood chippers, and compressors.

Registrations in PERP fall under three types: engines, equipment units, and tactical support equipment (TSE). Engines emit pollutants from fuel combustion, such as diesel

PM and oxides of nitrogen (NO<sub>x</sub>). Equipment units, during their operation, emit non-combustion particulates, such as PM<sub>10</sub> (or most commonly known as dust). Therefore, separate registrations are issued for portable engines and their associated equipment units to control these different emission sources. TSE is comprised of equipment using portable engines, including turbines, that meet military specifications and are used in combat, combat support, tactical or relief operations, or training for such operations. TSE registrations are listed under one registration per military facility and are multi-unit registrations which include, but are not limited to, internal combustion engines associated with portable generators, aircraft start carts, heaters and lighting carts.

Both private businesses and public agencies operate portable equipment in California. Examples of businesses that use portable engines in their activities include motion picture studios; amusement parks; utilities; construction services; crushing, screening, and recycling services; industrial cleaning services; marine construction and dredging services; oil and gas companies; and rental services. Examples of public agencies that use portable engines include public schools and universities, local governments, county landfills, municipal utilities, wastewater treatment facilities, military installations, and the California Department of Transportation.

Engines in portable equipment range in size from 50 brake horsepower (bhp) to greater than 3,000 bhp. The average annual operating hours for portable diesel-fueled engines is about 850 hours per year. Due to the mobile nature of portable engines, the emissions rarely occur in one location, but are spread over many locations over the course of 12 months. In addition, the actual operation of a specific engine can vary significantly. Engines used only for emergency applications may operate less than 20 hours per year. Conversely, some portable equipment activities can operate over 2,000 hours per year. Finally, the engine's load varies, depending upon the application. The load is typically 31 percent of maximum load. Similar to the variability in the hours of operation, an engine's load can vary significantly from application to application, from 25 percent to 80 percent of maximum load.

As of December, 2016, the total of active registrations in PERP was over 39,000 registered pieces of which about 30,000 were engines, about 4,000 were equipment units, and the remaining 5,000 were Tactical Support Equipment (TSE) owned by the military.

## **2. District Permit Programs for Portable Engines and Equipment Units**

Portable engines not registered in PERP may be subject to district permitting requirements. Permit requirements vary depending upon the air quality attainment status in individual districts. Some districts have permitting programs specifically for portable engines and equipment units. Owners of portable engines in these districts can permit engines with the district by demonstrating the engines meet specific emission rates. Some districts specifically exempt portable engines from permit requirements or have specific requirements for individual types of portable engines or equipment. Some districts do not have the resources to permit portable engines and defer permitting to PERP.

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## **II. STATEMENT OF REASONS**

This chapter summarizes the proposed amendments to the Portable Engine ATCM and to the PERP Regulation. It describes the problems being addressed by the amendments, and the rationale why the amendments are reasonably necessary to carry out the purpose of the regulation.

In developing these proposed amendments, staff has considered the comments received from stakeholders during the development process, and where possible addresses those comments.

### **A. Description of Challenges this Proposal is Intended to Address**

Overall, the Portable Regulatory Amendments have been developed to address the fact that compliance with the existing ATCM is in some cases not technically feasible and, in all cases, is much more expensive than originally anticipated. The amendments provide fleets the additional time to make the investments necessary to meet regulatory requirements, while clarifying requirements and dramatically improving staff's ability to implement and enforce requirements.

There are multiple factors impacting the decision to develop the Portable Regulatory Amendments: (1) High fraction of older engines in the existing inventory; (2) Lack of available retrofit technologies; (3) Repowers not feasible in most applications; (4) Federal emissions standards allowed manufacture of higher-emitting engines for longer than anticipated; (5) High cost of compliant engines and equipment; and (6) Tier 4 engines rated at greater than 750 bhp cannot meet current emissions requirements. These factors together make the current standards in 2017 and 2020 financially and, in some cases, technologically infeasible. In addition to these factors, the Portable Regulatory Amendments address stakeholder concerns and improve enforceability.

When the Portable Engine ATCM was originally adopted, staff predicted fleets would purchase new equipment over time earlier than they actually did. CARB's analysis of the existing inventory in PERP revealed that approximately 38% of all engines registered in PERP are Tier 1 or Tier 2, most of which would have had to have been replaced with Tier 4 engines by December 31, 2016 in order to meet the current ATCM fleet emission standards.

When the Portable Engine ATCM was originally adopted, the analysis supporting the regulation assumed Level-3 verified technologies (VDECS), such as diesel particulate filters, would become available for portable engines to meet the 2017 ATCM standards. However, retrofit diesel particulate filters proved challenging for the portable engines due to: 1) the large number of different applications (chippers, generators, pumps, compressors, crushers, etc.); 2) the number of different engine manufacturers and models; and 3) the varying duty cycles of each application. VDECS have not widely appeared in

the portable engine market. To this day, only 7 out of 30,000 registered engines in PERP have been retrofitted.

Another potential relatively affordable compliance option would have been to repower existing equipment with new compliant engines. Unfortunately, repowering existing equipment with Tier 4 technology is not an option because Tier 4 engines are much larger per horsepower than previous tier engines. Tier 4 engines also operate at higher temperatures, which require additional cooling through larger radiators and fans. This size difference of Tier 4 engines was not understood when the regulations were originally adopted because the technologies had not yet been developed.

In developing the Portable Regulatory Amendments, the analysis assumed Tier 4 engines would become commercially available in the 2011-2014 timeframe. Off-road engines are certified to national and California standards. These standards provide flexibility options through the Transition Program for Equipment Manufacturers, (TPEM or flexibility program). Under TPEM, equipment manufacturers may delay installing engines that comply with Tier 4 standards for up to seven years if they comply with certain production limitations and requirements for notification, recordkeeping, and annual reporting.

The ATCM recognized this may occur and allows registration of TPEM engines sold as Tier 4 but manufactured to Tier 3 standards, but underestimated the impact to compliance. Because of the higher cost of Tier 4 engines, the cost to redesign the equipment to accommodate the larger Tier 4 footprint, and because portable equipment is manufactured in relatively small volumes, a large number of TPEM engines manufactured to Tier 3 standards was sold in portable applications. As a result, TPEM engines, comprise approximately 18% of the PERP inventory.

When fleets needed to purchase new equipment, they often purchased equipment containing flex engines manufactured to Tier 3 emissions standards. Because VDECS are not available in the portable sector and Tier 3 engines require a VDECS to meet regulatory requirements, fleets with a high percentage of Tier 3 engines cannot meet the 2017 and 2020 fleet standards without having to prematurely retire nearly all of their Tier 3 engines.

The purchase price of a Tier 4 engine is approximately twice the cost of a Tier 3 engine because of emissions after treatment systems which require a larger footprint that necessitates equipment redesign and limited supply.

Finally, Tier 4 technology in the greater than 750 bhp engines applications is particularly challenging. Due to TPEM allowances in the emission standard, it can take a year or more for Tier 4 equipment to be delivered once an order is placed. In some applications, equipment with Tier 4 engines in the greater than 750 horsepower category is still not available today. Moreover, final Tier 4 technologies are certified to a 0.03 g PM/bhp-hr standard that was set after the portable rules were originally adopted. This level exceeds the current Portable Engine ATCM requirement of 0.02 g PM/bhp-hr.

As such, the existing regulatory requirement cannot be met with final Tier 4 equipment in engines rated to greater than 750 bhp.

In summary, when developing the original ATCM, staff envisioned more rapid fleet turnover resulting in lower-emitting fleets. Remaining engines were to be retrofitted or repowered to achieve regulatory requirements. However, retrofit and repower compliance options are not available and delays to the development of Tier 4 technologies has left fleets with higher emitting engines that all must be replaced by 2020 to meet the existing fleet requirements. Additionally, one of the ATCM fleet standards is more stringent than the standard to which some Tier 4 final engines are certified. For these reasons, the current fleet requirements are economically and, in some cases, technologically infeasible.

The Portable Regulatory Amendments also address stakeholder concerns and improve staff's ability to implement and enforce the fleet requirements. For example, members of the California Groundwater Association (CGA) expressed concern they cannot use Tier 4 engine technology for water well drilling due to engine load conflicting with the operation of the diesel filter used on these engines. Staff met with the water well drilling industry on several occasions to discuss this issue. Because this issue affects certifications of new Tier 4 engines at the engine manufacturer level, CARB formed an interdivisional task group whose goal was to understand the technology issues and focus on finding a solution. Appendix K details the concerns with Tier 4 engine exhaust systems, and staff's response to these concerns raised by stakeholders.

One of the contributing factors to the fleet requirements not being met was the fact that the existing incentives offered to fleets to lower their emissions average were not widely utilized. These incentives were designed to promote the use of alternative fueled engines, to adopt the cleanest technologies early, or to use zero emission technologies. However, very few fleets took advantage of these credits.

Finally, local air districts had expressed concerns to CARB staff that the fleet average requirements in the current ATCM were not enforceable because district staff who enforces the PERP could not determine if a particular piece of equipment in the field was or was not compliant. Moreover, because an individual fleet may own a mix of engines registered in PERP and engines permitted by local districts, only that fleet would know the status of all of the portable engines in their fleet. Therefore, neither the local districts nor CARB would be able to determine if that fleet was compliant with the fleet average in the current ATCM.

Staff has also enhanced advanced technology incentives and credits, and established comprehensive reporting and registration requirements for large fleets opting into the proposed fleet average option. The latter will allow for more effective enforcement of fleet emission reduction requirements by CARB staff through PERP.

## **B. Summary and Rationale for Each Regulatory Provision**

The Portable Regulatory Amendments ensure emissions reductions envisioned when the ATCM was adopted will be achieved by providing fleets more time to finance the purchase of new compliant equipment and by increasing the enforceability of regulatory requirements.

### **1. Modifications to the Portable Engine ATCM**

#### Section 93116.1: Applicability

Staff is proposing to remove the exemption for portable engines used at airports in the South Coast AQMD. This exemption was for engines covered by the South Coast Ground Service Memorandum of Understanding. This MOU is no longer in effect.

Staff is proposing to add an exemption for engines used exclusively in agricultural operations, except for those owned by a rental business. These engines operated at an agricultural source were redefined as being part of that stationary source under Senate Bill 700 (Stats. 2003, ch. 429)), and therefore do not qualify as portable equipment. The revised definition can be found in section 39011.5 of the California Health & Safety Code. After SB 700 was passed in 2003, the CARB could have made amendments to the PERP Regulation and the Portable Engine ATCM to reflect the fact that these engines have been considered stationary and not eligible for PERP and exempt from the ATCM. Instead of initiating a regulatory amendment process for these small changes, CARB issued a policy memorandum on January 25, 2008 (see Appendix H) that explained how these agricultural-use engines are to be regulated. This policy was meant to remain in effect until the next time the Portable Engine ATCM was amended. This amendment is necessary to incorporate the provisions of SB 700 and California Health & Safety Code 39011.5 into the appropriate regulatory structure. These agricultural use engines will continue to be regulated by the local districts, as they have been since SB 700 was passed.

Staff is proposing to revise the language to the existing exemptions for two-engine cranes, two-engine street sweepers, and two-engine water well drilling rigs for clarification. The current language implies a requirement for these vehicles to comply with the regulation listed in the subdivision. The language should state that vehicles subject to those regulations are exempt from the Portable Engine ATCM. In addition, the definition reference was added to the exemption for two-engine cranes so that the definition of crane can be removed from the ATCM.

Staff is proposing to add an exemption for engines on two-engine vehicles subject to the In-Use Off-Road Diesel Fueled Fleets Regulation (Off-Road Regulation). These auxiliary engines were made subject to that regulation in 2011. Previously, only the engines on certain categories of two-engine vehicles were subject to the Off-Road Regulation until the 2011 amendments extended the applicability. It is inappropriate to have these engines subject to two conflicting emission control regulations, so this new exemption will remove that conflict.

Staff is proposing to add an exemption for portable engines used exclusively on harborcraft subject to the Commercial Harborcraft Regulation. These engines are already exempt from the Portable Engine ATCM as stated in Section 93118.5(b)(2) of the Commercial Harborcraft Regulation. Because the exemption is not listed in the Portable Engine ATCM, there has been confusion about the regulatory applicability for these engines. This amendment will clarify the regulatory status of these engines when reading either regulation.

Staff is proposing to add an exemption for engines used exclusively in emergency events. These engines are already exempt from the Portable Engine ATCM as stated in Section 2455(c) of the PERP Regulation. Because the exemption is not listed in the Portable Engine ATCM, there has been confusion about the regulatory applicability for these engines. This amendment will clarify the regulatory status of these engines when reading either regulation.

Staff is proposing to add an exemption for Tier 3 engines approved for use in hazardous locations. These engines are built according to the requirements set forth in the Code of Federal Regulations for locations that are classified as hazardous, and are built with equipment such as spark arresters and thermal barriers that make them safe to operate in these areas. These engines are critical for use in certain construction and drilling operations, and they need to operate beyond the allowable dates in the ATCM. Currently, these engines are produced to meet Tier 3 emission standards under the TPEM provisions which expire within the next two years. However, U.S. EPA may grant an exemption from the Tier 4 standards for these engines in the near future, which would allow the engine manufacturers to meet the ongoing demand with newly-produced Tier 3 engines. The proposed exemption from the ATCM would allow the local air districts to permit the existing engines that are used at hazardous locations and the Tier 3 engines that may be produced in the future if the EPA grants the Tier 4 standard exemption. Staff does not expect that there will be a large number of these engines in California as the Tier 3 engines approved for hazardous locations are approximately 50% to 100% more expensive than a regular Tier 4 final engine, and they are meant for a very specific use.

#### Section 93116.2: Definitions

Staff is proposing to incorporate all the definitions in the PERP Regulation by reference. This will allow the use of certain terms in the ATCM without having to add more definitions.

Staff is proposing to add a definition for “Agricultural Operations” that is necessary to specify which engines will be exempt from the ATCM. This definition follows the existing definition in the Stationary Engine ATCM. Portable engines used in forest operations or the processing or distribution of agricultural products will not be part of agricultural operations as defined. Therefore, they will be subject to the Portable Engine ATCM.

Staff is proposing to delete the definition of “Crane”. The proposed amendment to the exemption for auxiliary engines on two-engine cranes includes a reference to the definition in the Off-Road Regulation. Therefore, this definition is no longer necessary.

Staff is proposing to add a definition for “Common Ownership or Control” and to revise the definition of “Fleet”. With the proposed amendments to the fleet requirements, it will be necessary for fleets to determine if they are a large fleet or a small fleet, so they know which compliance requirements are applicable to them. A fleet will be defined as all the non-exempt portable engines under common ownership or control of a single entity or military installation operated in California, including engines designated as emergency-use or low-use. The proposed definition for Common Ownership and Control follows the same definition in the Off-Road Regulation. If an existing fleet has engines with cumulative horsepower of over 750 on June 30, 2019, then it will follow the compliance requirements for a large fleet. Conversely, if a fleet has cumulative horsepower of 750 or less on that date, it will be deemed a small fleet. Representatives from the United States military demonstrated to CARB staff that it would be very difficult logistically to include all non-tactical support engines owned by the U.S. military into one fleet, and subdividing the fleets will lessen the chance of our military facility having a concentration of higher-emitting engines, so each military facility or installation may be considered as a separate fleet.

Staff is proposing to delete the definition of “Diesel-Fueled”. This definition is tautological and therefore unnecessary.

Staff is proposing to revise the terms “Engines Used Exclusively in Emergency Applications” and “Low-Use Engines”. The former term is being simplified to “Emergency-Use”, and all references to this term throughout the ATCM will be updated. The language for both terms will be revised to require these engines be designated by the responsible official and identified as such on the permit or registration. In addition, the allowable hours for low-use status are being extended from 80 hours per calendar year to 200 hours. This makes the definition of low-use consistent with the Off-Road Regulation, which is beneficial because many fleets subject to the Portable Engine ATCM also own equipment subject to that regulation. Staff does not believe this extension of low-use hours for portable engines will cause a significant increase in emissions as explained in Appendix J.

Staff is proposing to add a definition for “Flexibility Engine”. This definition will reference both sections of Federal law, one of which didn’t exist when the current language referencing flexibility engines was written. The definition will also include the engines that were included in the Averaging Banking and Trading (ABT) program that have emissions equivalent to Tier 4 final engines, which will allow these engines to be eligible for initial permitting or registration, which is discussed later in this report.

Staff is proposing to add a definition for “Forest Operations”. This definition is necessary to specify which engines are not to be a part of agricultural operations. This definition follows the existing definition in the Off-Road Regulation. Portable engines used in forest operations will be subject to the requirements of the ATCM.

Staff is proposing to delete the definition of “In-Use Engines”. With the proposed amendments to the requirements section, this term will no longer be used anywhere in the ATCM, and therefore is unnecessary.

Staff is proposing to revise the definition of “Maximum Rated Horsepower”. Although the rating may be listed on the engine nameplate, it may also be found on the emission control label. This definition needs to include both locations so that the fleet owner knows where to get the information necessary to demonstrate compliance.

Staff is proposing to delete the definition of “Participating Airlines”. With the removal of the exemption for engines operated at airports, this definition is no longer necessary. Staff is proposing to add a definition for “Replacement Engine”. Staff learned that engine manufacturers use these engines to replace engines in original equipment manufacturer (OEM) equipment after a breakdown occurs. These engines comply with the certified standards, but have different language on the emission control label (ECL). This definition is necessary to clarify how replacement engines will be included in the fleet emission requirements. These replacement engines will be eligible for district permits or initial registration in PERP based on the tier level as indicated on the ECL.

Staff is proposing to revise the definition of “Responsible Official”. The current definition states it is someone who has authority to certify compliance for the engines just under his/her jurisdiction. Because the fleet emission requirements are being amended, it will be necessary to certify compliance for the entire fleet. Having multiple responsible officials for each fleet has been difficult for managing compliance, so the existing language that allows more than one responsible official is being revised to specify that a fleet may only have one.

Staff is proposing to delete the definition of “Selective Catalytic Reduction (SCR) System”. Because the intent of the Portable Engine ATCM is to reduce emissions of diesel PM, it is inappropriate to include provisions for NOx control devices such as SCR.

Staff is proposing to add definitions for Tier 1, Tier 2, Tier 3, and Tier 4 interim engines. In addition, the definition of “Tier 4 emission standards” is being revised to “Tier 4 Final Engine”. These definitions are being added and revised in order to stipulate how these engines will be incorporated into the amended fleet requirements. These definitions include engines built under the Averaging, Banking, and Trading program, which will be treated as regular certified engines.

Staff is proposing to delete the definition of “Transportable”. This definition is not used anywhere in the ATCM outside of the definition of “Nonroad Engine”, and should be removed.

### Section 93116.3: Requirements

#### Subdivision (b) Diesel PM Standards

Staff is proposing to remove the requirement in subdivision (b)(1) that only engines operating under valid permits or registrations are subject to the requirements later specified in the subdivision. The current requirement allows non-certified engines that

are not required to be permitted to continue operating until the fleet is forced to remove them in order to comply with a fleet average standard. Under this revision, all portable engines subject to the ATCM will have to be certified, even if they are not required to be permitted. This will achieve further emission reductions by forcing those unpermitted, non-certified engines out of service in California upon the effective date of the amendments. The amount of emission reductions is not quantifiable because there is no accurate estimate of the number or size of unpermitted engines currently operating in the State. Staff expects that local air districts will enforce this requirement as they find these engines through their normal enforcement activities.

Staff is proposing to remove the provision in section 93116.3(b)(1)(B) that requires non-certified engines designated as low-use or emergency-use be replaced or removed from service by January 1, 2017. By the time these proposed amendments are effective, this requirement will have already been implemented. Therefore, the language will be obsolete, and should be removed.

Staff is proposing to remove the provision in section 93116.3(b)(1)(C) related to the extension for non-certified engines from January 1, 2010 to December 31, 2010. This language is obsolete and should be removed. The amended language in section 93116.3(b)(1) will retain the requirement that non-certified engines are prohibited from operating in California.

Staff is proposing to revise the permit and registration eligibility requirements in section 93116.3(b)(2). The current version states that only engines that were not permitted prior to January 1, 2010 are subject to the subsequent eligibility requirements. This needs to be updated to any engine not permitted prior to the effective date of the amendments.

Staff is proposing to remove the eligibility for engines certified to a previous tier if the application was submitted within 6 months of the tier change. The final tier has been in effect for all engine sizes since 2015, so this requirement is obsolete and should be removed.

Staff is proposing to revise permit or registration eligibility for flexibility engines. It is not equitable to allow engines produced several years in the past (e.g. all Tier 1 engines and Tier 2 engines rated at 750 bhp or less) to be newly permitted just because they are flexibility engines when their normally-certified counterparts are not eligible. The eligibility for flexibility engines should be limited to only those TPEM engines that were most recently produced, which includes Tier 3 and interim Tier 4 interim engines rated at less than 750 bhp and Tier 2 and Tier 4 interim engines rated at 750 and greater. In addition, certain flexibility engines produced under the Average Banking and Trading (ABT) program will also be eligible. These engines are listed as certified to Tier 4 Interim standards on the CARB Executive Order, but the actual certified emissions of the engine family meet the Tier 4 Final emission standards. These engines should be eligible for initial registration or permitting in recognition of the efforts by engine manufacturers to produce engines meeting the cleanest emission levels.

Staff is proposing that local districts be allowed to permit Tier 1, Tier 2 and Tier 3 engines past January 1, 2017, as long as the owners demonstrate that the engines

were resident in California prior to that date. The current ATCM prevents local districts from permitting any non-flexibility non-current tier engine on or after January 1, 2017. This eligibility extension will allow districts to regulate unpermitted certified engines discovered during normal enforcement activities. While this extension allows the local districts to permit these engines, the decision to do so is still at the discretion of each local district. The retroactive January 1, 2017 residency date was chosen for this amended provision to prevent an influx of higher emitting engines from out of state prior to the amended ATCM taking effect. The local districts will not be able to permit an engine unless the engine complies with all other applicable requirements in the ATCM, including the fleet requirements. For example, if a district found an 80 bhp Tier 1 engine owned by a small fleet in 2021, that engine could not be permitted because the date for phase-out had passed. If that same engine was owned by a large fleet, it could be permitted if the fleet was using the fleet average option and it could absorb that Tier 1 engine without exceeding the Fleet Average Standard. That engine would then be required to be registered with PERP in order for the Fleet Average Standard to be properly enforced.

Staff is proposing to remove the requirement that certified engines that are designated as low-use or emergency-use be upgraded to Tier 4 final or retrofitted by January 1, 2020. Staff is proposing instead to make these engines exempt from the fleet requirements which is discussed further in the amendments to subdivision (c).

Staff is proposing to require that fleet owners must newly designate Tier 1 and Tier 2 engines as low-use or emergency use no later than 6 months prior to the phase-out deadline for each tier. This will necessitate that fleet owners plan ahead to ensure that all their engines are properly designated and also help them prepare to comply with the applicable fleet requirements by converting older engines from regular use. In addition, this requirement will assist program implementation by preventing a large influx of modification applications to the program right before the phase-out dates.

#### Subdivision (c) Fleet Requirements

For the reasons discussed previously, staff is proposing to revise the current fleet emission reduction strategy in section 93116.3(c) of the ATCM. In the current ATCM, fleets must meet a set of fleet average standards that take effect in 2013, 2017, and 2020. Staff is proposing the regulation impose a tier phase-out schedule instead of a fleet average for all fleets, although larger fleets will still have an option to use a fleet average. Under the phase-out schedule, regular Tier 1, Tier 2, and Tier 3 engines will have a service life of between 15 and 24 years, depending on the production date of the engine. All flexibility engines will be required by the schedule to be removed from California after 17 years of service. Requiring small fleets to follow a phase-out schedule is not more stringent than the existing control strategy of fleet average standards. Under the existing fleet average method, a small fleet would not be able to keep a Tier 1 engine in the fleet beyond the final standard date of January 1, 2020, even if the rest of the fleet was comprised of Tier 4 final engines. In order to determine the amount of Tier 1 horsepower that can be in the fleet and still be in compliance with the current 2020 fleet standard, the following equation can be used for engines rated less than 175 brake horsepower:

$$[x (0.87 \text{ g/bhp-hr}) + y(0.01 \text{ g/bhp-hr})] / 750 \text{ bhp} = 0.04 \text{ g/bhp-hr}$$

Where:

x = brake horsepower of Tier 1 engines

y = brake horsepower of Tier 4 final engines

0.87 is the emission factor for Tier 1 engines

0.01 is the emission factor for Tier 4 final engines

0.04 is the 2020 Fleet Average for engines <175 bhp

Since 750 is the maximum total cumulative horsepower allowed for a small fleet, y can be expressed as 750 – x. Solving for x then results in 26.1 bhp, which is smaller than the engines affected by the Portable Engine ATCM. Therefore, the proposed phase-out method is not more stringent because it would not be possible to keep a Tier 1 engine in a small fleet past January 1, 2020 under the current fleet average method.

Staff is proposing that engines used in portable applications but certified to on-highway standards in 40 CFR part 86 would comply with the phase-out as a Tier 3 engine if they were built prior to 2007. These on-highway engines built in 2007 or later have equivalent emissions to Tier 4 interim, so they would be exempt from the phase-out schedule.

Staff is proposing that fleets exceeding 750 bhp in size would have the option to follow a fleet average schedule. These large fleets may only use this option if they have all their existing portable engines registered in PERP by January 1, 2019, and any engines purchased after that date must also be registered in PERP. Registered engines approved for hazardous locations would not be included in the fleet average because they will be exempt from the ATCM. If any unpermitted or unregistered engines owned by a large fleet are discovered after January 1, 2019, then the large fleet loses the ability to use the Fleet Average option, and must comply with the phase-out schedule. To use the Fleet Average option, the large fleet must submit a written request to CARB by June 30, 2019, which is 6 months prior to the first fleet average standard date.

In either compliance pathway, improved reporting requirements would allow both compliance options to be effectively implemented and enforced through the registration process. Tables 2 and 3 show the proposed portable ATCM tier phase-out and fleet average requirements, which may be compared to current regulatory fleet average requirements in Table 1.

**Table 1: Current Portable Engine ATCM Fleet Requirements**

<b><i>Fleet Standard Compliance Date</i></b>	<b><i>Engines &lt;175 hp (g/bhp-hr)</i></b>	<b><i>Engines 175-750 hp (g/bhp-hr)</i></b>	<b><i>Engines &gt;750 hp (g/bhp-hr)</i></b>
1/1/13	0.3	0.15	0.25
1/1/17	0.18	0.08	0.08
1/1/20	0.04	0.02	0.02

**Table 2: Proposed Tier Phase-Out Schedule**

Engine Certification	Engines rated 50 to 750 bhp		Engines rated >750 bhp
	Large Fleet	Small Fleet	
Tier 1	1/1/2020	1/1/2020	1/1/2022
Tier 2 built prior to 1/1/2009	1/1/2022	1/1/2023	1/1/2025
Tier 2 built on or after 1/1/2009	NA	NA	1/1/2027
Tier 3 built prior to 1/1/2009	1/1/2025	1/1/2027	NA
Tier 3 built on or after 1/1/2009	1/1/2027	1/1/2029	NA
Tier 1, 2, and 3 flexibility engines	December 31 of the year 17 years after the date of manufacture		

**Table 3: Proposed Fleet Average Option for Large Fleets**

<b><i>Compliance Date</i></b>	<b><i>Fleet Diesel PM standard</i></b>
1/1/20	0.10
1/1/23	0.06
1/1/27	0.03

Staff is proposing to make all low-use and emergency use engines exempt from the fleet requirements in sections 93116.3(c)(1) and (c)(2) which would allow them to operate indefinitely, as long as they maintain the thresholds for low-use or emergency use. This exemption from fleet requirements for low-use and emergency use follows the Off-Road Regulation, which also provides an exemption from fleet emission requirements for these types of use.

Staff proposes that any engine retrofitted with a Level 3 VDECS would be exempt from the engine phase-out schedule described above. Engines retrofitted with a Level 3 VDECS may be used in the Fleet Average, however. Staff recognizes that some fleet owners made a significant effort and investment to retrofit these engines for the purposes of meeting the fleet standards in the current ATCM, and these engines should remain in compliance. In addition, this exemption will provide an incentive for fleet owners to retrofit their engines as an alternative path to comply with the fleet emission requirements.

Staff is proposing to revise the provisions listed in sections 93116.3(c)(5) and (c)(6) for converting emergency-use and low-use engines back to regular use. This will only be allowed for Tier 1 and Tier 2 engines if the fleet owner has exceeded the operational limitations for these engines. This restriction on Tier 1 and Tier 2 engines will prevent fleets from increasing emissions for the time these engines operate until they are placed out of service. Tier 3 engines have lower emissions, and therefore may be converted back to regular use at will by the fleet owner. Any engine that converts back to regular use would immediately be subject to the fleet requirements in either 93116.3(c)(1) or (c)(2), and the responsible official will be required to submit an application to convert the engine back to regular use.

Staff is proposing to remove all the provisions related to engines equipped with SCR as a retrofit. Because SCR is designed to only reduce NOx emissions, these provisions should be removed from an airborne toxic control measure intended only to reduce diesel particulate matter. As of this writing, there are no engines registered in PERP retrofitted with SCR devices.

Staff is proposing to revise the language in section 93116.3(c)(7) to follow the updated fleet average standard dates, and to clarify that fleets may not exceed the standard between or after the fleet standard effective dates.

Staff is proposing to add a provision that will give benefits to fleets that were able to meet the 2017 fleet average standards in the current ATCM. This is necessary to acknowledge the investment that fleet owners made to comply with the existing ATCM requirements, and therefore not put them at an economic disadvantage with the fleets that did not comply. The current ATCM has three separate fleet average standards based on engine size categories. Staff proposes that if a fleet demonstrates compliance with one or more of those standards, then the fleet may choose one of two benefits for the engines in those size categories. One benefit is a two year extension on the phase-out schedule in section 93116.3(c)(1). The second benefit is the ability to double count Tier 4 interim and Tier 4 final engines in large fleets choosing to comply with the fleet average standards in section 93116.3(c)(2). Under this proposal, if a fleet showed compliance with the standards for engines less than greater than 175 bhp and for engines 175 – 750 bhp, but not for engines greater than 750 bhp, then the benefit would only be applicable to the engines rated at 750 bhp or less in the fleet. If it was a large fleet using the fleet average option, they could only double count the Tier 4 engines rated at 750 bhp or less in the calculation. A fleet owner must submit a statement of compliance by 60 days from the effective date of the amendments to request the benefit.

Staff is proposing to add a provision that will give fleets an incentive to remove older, high-emitting engines earlier than the phase out dates. For every Tier 1 engine removed by January 1, 2019 or every Tier 2 engine rated at 750 bhp or less removed by January 1, 2021, the fleet may operate a Tier 3 engine of equal or lesser size by an extra year. Fleets may only use this provision for engines that were removed after the effective date of the regulation. Staff does not believe it is appropriate for fleets to get credit for removing engines many years in the past, and any specific date written into the ATCM would require additional recordkeeping and resources to verify removal

dates. In order to use this provision, fleets would have to choose the specific Tier 3 engine to extend when they cancel the permit or registration for the Tier 1 or Tier 2 engine. If that specified Tier 3 engine is removed from the fleet before the phase-out date, then the fleet may submit a request to transfer the extension to another Tier 3 in the fleet. Tier 1 engines have a diesel PM emission standard that is more than double the standard for Tier 3, while Tier 2 engines have a diesel PM emission standard equivalent to Tier 3 engines. Therefore, allowing Tier 3 engines to operate for one more year if a Tier 1 engine is removed one year early or if a Tier 2 engine is removed two years early from a small fleet will cause an emission reduction from that fleet. If a Tier 2 engine is removed one year early from a large fleet, then the one year delay for a Tier 3 will cause no emission change. The total emission reductions cannot be quantified due to lack of data regarding the potential use of this provision.

#### Subdivision (d) Fleet Average Calculations

Staff is proposing to add language that clarifies how replacement engines as defined in the ATCM will comply with the Fleet Average requirement in section 93116.3(c)(2). Because these engines are newly defined with these amendments, there needs to be a way to include these engines in the fleet average calculation. Replacement engines have no family name indicated on the emission control label (ECL), so it is impossible to use the results of emissions measurements taken during the certification process as is done for regular certified engines. For replacement engines, the diesel PM emission standard applicable to the tier level to which the engine was built will be used. This follows the existing requirement for flexibility engines without family names indicated on the ECL.

Staff is proposing to revise the provision where fleets can affect their fleet average calculation by using or leasing electrification as specified in section 93116.3(d)(2)(A). Electrification could be grid power or a mobile battery-powered unit. If a fleet has an existing engine and they completely replace that engine with electrification, then they may add the replaced engine into the fleet average calculation with an emission factor of zero. In addition, if a fleet is facing a choice of purchasing a portable diesel generator or installing an electrified unit, and they choose electrification over the diesel engine, the fleet may add the diesel engine into the calculation with an emission factor of zero. By adding these two scenarios to the provision that allows fleets to modify their fleet calculation, CARB is encouraging the use of electrification which has significantly less emissions than diesel combustion.

Staff is proposing to revise the provision that allows Tier 4 final engines in the fleet prior to 2015 to be counted twice in the calculation for the 2013 and 2017 fleet average standards. This provision is obsolete since it references 2015, and therefore needs to be updated. It is appropriate to give fleets credit for investing in clean technology earlier than required. The revised provision will allow Tier 4 interim and Tier 4 final engines rated at greater than 750 bhp to be counted twice in the fleet average for 2020 and 2023, if they were in the fleet prior to 2017. This credit will be given to large fleets that invested in these expensive engines well before the first fleet average standard effective date.

#### Subdivision (e) Prohibition of Sale

Staff is proposing to add a provision that will make it illegal to sell non-compliant engines. Local air districts have encountered people who knowingly or routinely sell non-compliant engines to unsuspecting buyers. Because there is no prohibition for selling these non-compliant engines, these customers are stuck with an engine they can't use, and they have no legal recourse. To help solve this problem, staff proposes to require that no person may sell an engine to an end user in California if the engine is uncertified, nor Tier 1, 2, or 3 certified engines after the applicable phase-out schedule dates take effect. The dates for certified engines are the same as the phase-out schedule for small fleets, engines rated at greater than 750 bhp, and flexibility engines. The sale of engines meant for resale out of California will not be prohibited. This provision will give enforcement staff the ability to issue violations to sellers of non-compliant engines, and thereby help reduce the occurrence of these sales.

#### Subdivision (f) Disclosure of Applicability

Staff is proposing to add a provision that will require the seller of any certified portable engine in California to provide a written disclosure to the buyer as part of the sales transaction. It is important that the new owner of a portable engine be aware of all applicable regulatory requirements. This requirement follows the Off-Road Regulation and the Truck & Bus Regulation, which have almost identical disclosure of applicability requirements. Staff expects that once the amendments to the ATCM are approved, a combined disclosure statement that satisfies the requirements of all three regulations will be developed and used.

#### Section 93116.4: Fleet Recordkeeping and Reporting Requirements

Staff is proposing to revise the exemption from all the recordkeeping and reporting requirements if each of the engines in the fleet is certified to Tier 4 final standards or equipped with a Level 3 verified retrofit. The exemption will now include engines certified to Tier 4 interim standards. It is appropriate to exempt Tier 4 interim engines because they have the same low diesel PM emission rate as Tier 4 final engines.

Staff proposes to remove the recordkeeping and reporting exemption for engines "equipped with a combination of different verified emission control strategies", because there never would be an engine so equipped.

Staff is proposing to add a recordkeeping requirement for emergency-use engines. To verify that these engines are being used as they are designated, it is necessary to have records. Fleet owners will have to maintain dates of use and nature of the emergency on a calendar year basis. As with other records required by the ATCM, these records must be provided upon request by staff at CARB or local districts.

Staff is proposing to revise the recordkeeping requirements engines affected by the use of electrification as specified by section 93116.3(d)(2)(A). The language for the existing scenario will be clarified and requirements will be added for the additional two scenarios where the fleet average calculation will be modified. This is necessary so that fleets that use the scenarios will be able to provide the necessary information to program staff who will verify the calculation.

Staff is proposing to remove the status report due on March 1, 2011. This status report requirement is obsolete and should be removed.

Staff is proposing to add an annual reporting requirement for low-use engines. Although recordkeeping is currently required for low-use engines, it is not sufficient to verify that all of the low-use engines in California are compliant. The proposed annual report will allow CARB staff to verify that low-use engines are staying below their allowable hours of use threshold. The report would be due by March 1 of each year and must contain the permit or registration number for each engine and hour meter readings for each engine taken at the beginning and end of the preceding calendar year. This requirement follows the Off-Road Regulation, which has similar reporting requirements.

Staff is proposing to revise reporting requirements for fleets subject to the Fleet Average Standards. Instead of requiring the report for all fleets, these requirements would only apply to the large fleets electing to use the fleet average option in section 93116.3(c)(2). The reporting dates have been updated according to the proposed fleet average standard effective dates. In addition, fleets that add Tier 1, Tier 2, or Tier 3 engines to their fleet will have to submit an updated compliance statement as required in section 93116.4(d)(2) to prove that the addition of the engine did not cause the fleet to exceed the Fleet Average Standard. Conversely, fleets that remove Tier 4 interim or Tier 4 final engines from their fleet must also submit an updated compliance statement to prove that they are staying in compliance with the fleet average as required in section 93116.3(c)(7). Equipment dealers and rental businesses will not have to submit the updated compliance statement when they remove a Tier 4 engine. These fleets comprise almost exclusively new or near-new equipment that is in full compliance with the Fleet Average Standards. They also have a very high turnover rate, which would make this reporting requirement excessively burdensome.

Staff is proposing to revise the compliance statements to include only information necessary to verify compliance. The compliance report will no longer contain make and model of the engine but will contain the registration number, bhp rating, and engine family name. In addition, the report will contain a list of registration numbers for emergency-use engines owned by the fleet, but other information such as make, model, serial number, year of manufacture, and emission factor will no longer be required for these engines because that information can be referenced by registration number. The information required for engines operating only within the OCS will be similarly updated. A list of low-use engines will no longer be required to be submitted with the compliance statement as the fleets will submit separate annual reports for these engines.

### Miscellaneous

Staff has substituted the word “regulation” for the term “ATCM” and the word “shall” for the word “must” throughout the regulatory text, as it is more precise.

Staff included HSC 41754 to the references cited for each section.

## **2. Modifications to the PERP Regulation**

### Section 2450: Purpose

Staff is proposing to add language for clarification and to specify that registration under this program does not relieve the registrant from any other obligations in state law. This language clarifies that other applicable laws must be complied with and are not affected by registration. During the course of developing these regulatory amendments, CARB received comments that using a registered engine could be asserted as grounds to avoid the California Environmental Quality Act, Public Resources Code section 21000, et seq., to consider the potential environmental impacts of the work for which the engine is used. These regulations do not constitute compliance with any other potentially applicable laws.

### Section 2451: Applicability

Staff is proposing to revise the prohibition for engines and equipment units that have been determined to qualify as part of a stationary source permitted by a district in section 2451(c)(3). Staff is proposing to delete the qualification that the stationary source must have existing permits issued by the districts. There is nothing in the definition of Stationary Source that mentions permits, and staff believes that having local permits is irrelevant to the determination of whether a portable engine or equipment units qualifies as part of a stationary source.

Staff is proposing to make engines and equipment units used exclusively in agricultural operations ineligible for registration in PERP, except those owned by a rental business. These agricultural-use engines are to be regulated as part of stationary sources, per SB 700 and HSC section 39011.5. Because the engines will be ineligible for PERP, the associated equipment units should also be ineligible. These portable engines and equipment units used at agricultural sources will be regulated by the local air districts. However, engines and equipment units owned by rental businesses and used at agricultural sources will remain eligible for registration in PERP.

Staff is proposing to move the provisions in section 2451(c) that deal with the prohibitions of registered generators used to provide power into the grid and to power stationary sources or equipment to section 2453(m). Section 2451(c) is the listing of types of engines and equipment units that are not eligible to be registered, meaning they should never enter the program initially. Section 2453(m) lists types of operations of registered engines and equipment units that make registration invalid at specific locations. The program would never know how a generator would be used, and therefore would never deny registration of the generator based on these prohibitions. These generator use prohibitions will be moved to the list of operations that make registration invalid at specific locations, as they should have been when added to the PERP Regulation during the amendments of 2004. Staff is proposing revisions to these generator use prohibitions which are described in the amendments to Section 2453 later in this document.

Staff is proposing to make engines that were certified for stationary use only according to 40 CFR part IIII or part JJJJ ineligible for registration in PERP. If an engine is certified for both stationary and nonroad use, then it will still be eligible. Whether the engine is certified for both uses or just for stationary use will be specified on the Emission Control Label (ECL), so this can be verified upon application.

#### Section 2452: Definitions

Staff is proposing to incorporate all the definitions listed in the Portable Engine ATCM by reference. This will allow the use of certain terms in the PERP Regulation without having to add more definitions.

Staff is proposing to add a definition of “Engine Failure”. The definition is almost identical to the existing definition of “Mechanical Breakdown”, but the term “Breakdown” is used in many local district rules, and a new term is necessary to avoid confusion for the implementation of the provision for stationary engines proposed in section 2453(m). This definition will also include failure of the computer-controlled emission control module and the fuel delivery system, as these are also causes for engines to be placed out of service. The term will not include the failure of the generator or other equipment powered by the engine. In these failure situations, the problem is almost always with the engine, not the equipment being powered by the engine.

Staff is proposing to add a definition for “Essential Public Service”. To clarify the term “Provider of Essential Public Service”, it is necessary to define the type of service provided. Essential public services are those services provided to the general public to protect the public health and safety or the environment. Utility services that provide potable water, sanitation, waste management, and energy for heating and light, as well as police, fire, and correctional services are essential to providing and preserving public health and safety. Transportation and communication services are essential as well by providing for the orderly movement of goods and people under normal circumstances, and for responding to exigent circumstances. For instance, commercial airlines transport emergency medical supplies, patients, and organ transplants to hospitals. Communication services are used by first responders to emergencies, and to inform the public of emergencies and threats. Hospitals that provide trauma services, for the care of the seriously injured or ill in ordinary and exigent circumstances, are essential to the public welfare. In contrast, independent contractors that work for the providers of essential public services are not themselves providers of essential public services. They are able to and often do work for entities that are not providers of essential public services.

Staff is proposing to revise the definition of “Identical Replacement”. The revision will allow engines of different model numbers to serve as identical replacements. In some cases, a newer version of the same type of engine may have a different model number, and these engines should be allowed to serve as identical replacements. The revisions will also require that all identical replacements must comply with the phase-out schedule in the ATCM. CARB staff does not believe it is appropriate to allow the replacement of an older tier engine with another engine of the same high-emitting tier after that tier is phased out. The identical replacement provision affects only non-registered engines, so

this would prevent any older tier engines from coming into California under this provision. The existing definition allows engines of equivalent emissions to serve as identical replacement, but the proposed revision requiring the engines meet the phase-out schedule in the ATCM may cause some minor emission benefits. For example, any Tier 1 engine that breaks down after 2020 shall be replaced with an engine that is certified to Tier 2 or better, instead of another Tier 1 engine. The emission benefits are not quantifiable due to the unknown number of engines that may be replaced.

Staff is proposing to remove the definition of “Mechanical Breakdown” and replace it with “Engine Failure” for the reasons stated above.

Staff is proposing to delete the definition of “New Nonroad Engine”. This term is only used in an engine requirement that staff is proposing to remove with these amendments. Therefore, this definition should be removed.

Staff is proposing to delete the definition of “Prevention of Significant Deterioration”. This term is not used anywhere in the Regulation. It is therefore unnecessary and should be removed.

Staff is proposing to revise the definition of “Provider of Essential Public Service”. The current definition requires that the identification of these be done by staff case by case. Many companies think they qualify under the definition when in fact they do not. This revision will make the identification of PEPS much more straight-forward. The definition of an “Essential Public Service” will be listed separately, and then this definition will specifically list all the providers of those services.

Staff is proposing to add a definition for “Remote Locations”. This will include locations that are more than one-half mile from any residential area, school, or hospital. Projects in remote locations will be exempt from the notification requirements in section 2455(a). This is very similar to the definition of “remotely-located agricultural engine” in the Stationary Engine ATCM.

Staff is proposing to revise the definition of “Resident Engine”. The current definition requires that a resident engine must have a current valid district permit issued prior to the amendments that became effective on February 19, 2011. With this revision, the initial issuance date of the permit is being extended to July 1, 2019. This follows the requirement in the Portable Engine ATCM that large fleets must have all engines registered in PERP prior to that date in order to use the fleet average option. This revision will allow those large fleets with some engines under district permit to get them registered in PERP.

Staff is proposing to revise the definition of “Responsible Official”. The definition will specify that they must have the authority to certify compliance for engines in the entire fleet, not just those under his/her jurisdiction. This should only be one person within a company or public agency, so the existing language that allows more than one responsible official now specifies that a fleet may only have one.

Staff is proposing to add a definition for “Temporary Registration”. This term is necessary to distinguish between the existing term “Registration” and the documents issued per the process proposed in section 2453(g).

Staff is proposing to delete the definition of “Transportable”. This term is not used anywhere in the Regulation except in the definition of “Nonroad”. It is therefore unnecessary and should be deleted.

Staff is proposing to add the definition of “Two-engine Vehicle”. This term is necessary because eligibility criteria for the auxiliary engines on these vehicles are being proposed with these amendments.

Staff is proposing to revise the definition of “Volatile Organic Compound (VOC)”. This definition is being updated to reflect the current list of exempt compounds.

### Section 2453: Application Process

Staff is proposing to revise the provision for identical replacement provision in subdivision (c). The notification time will be extended from 5 days to 30 days because it has not always been possible to submit notification within the required 5 days.

Staff is proposing to modify the application approval timelines in subdivision (d). Notification of a complete application will no longer be required within 30 days. This notification removal will allow staff to immediately proceed with issuing registration once an application is deemed complete, rather than having to send a letter to the applicant. This makes the process much more efficient. Written notification will still be required for incomplete applications and they will be denied within the existing 90 day time frame if the applicant fails to provide the information or fees to make the application complete.

Staff is proposing to modify the registration issuance timeline in subdivision (e). Registration will have to be issued 90 days from the date the application is deemed complete instead of 90 days from receipt. This eliminates the difficult situation where the applicant submits the requested information for the incomplete application very close to the 90 days from original receipt deadline.

Staff is proposing to add a provision that will allow for issuing a temporary registration for engines certified to Tier 4 final standards and for certified spark-ignition engine that meet the most stringent emission standard. Temporary registration will be issued as expeditiously as possible from the date of application receipt. This will allow the owners of the engines to put them into service quickly, instead of waiting several weeks for the normal application process. There will not be an extra fee for this service, and it is only for the cleanest engines available. The temporary registration will expire within 3 months, and it is expected that full registration will have been issued by then, if the original application was complete.

Staff is proposing to modify the provision for designation of home district. The current regulation specifies that the home district may only be changed by the owner of the registered engine or equipment unit at the time of renewal. Technically, the home district would only need to be changed upon renewal because that is when the arranged inspection is due. However, the program has received numerous requests to change the home district at other times because the owner neglected to do it upon renewal or because the unit has changed ownership and the new owner operates it in a different district. This results in the awkward situation where the registrant notifies the listed home district for the inspection, but the unit is actually located in another district, so that other district has to perform the inspection. Staff proposes to allow the program staff to change the home district upon the request of a local district so that these awkward situations can be minimized.

Staff is proposing to modify the provision that district permits are preempted by registration, except under certain circumstances as stated in subdivision (m). Temporary registration will be added to this preemption. The language will also be revised to state that district permits will only be obtained when it is required. This allows districts the discretion to allow engines or equipment units registered in PERP to operate in certain circumstances.

Staff is proposing to add examples of situations that make the registrations invalid at specific locations as stated in subdivision (m)(4). This required reformatting of the subdivision to properly list those situations. Engines registered as TSE would not be subject to this provision, which would allow them to operate under PERP in these situations. The situations being added or revised include:

Locations where engines, equipment units, and associated engines have been determined by the district to qualify as part of a stationary source. The districts have been making these determinations since the start of the program, and were usually citing section 2451(c)(3), even though that section states the determination must be made by CARB for registration eligibility. Staff believes that the districts have the authority to make these stationary source determinations in the field, so it is appropriate to add this language to clarify what has always been in practice.

Locations where the permitted stationary engine has exceeded the limitations on the district permit. If a permitted stationary engine has exceeded its limitations, it is not appropriate to use a registered engine to continue the operation. Staff learned that was happening in regular operations and emergency operations, so language will clarify that it is not allowed even during an emergency.

The generator use prohibitions from 2451(c) will be moved to subdivisions (m)(4)(D) and (E) with some revisions as described below:

Staff is proposing to include language that clarifies that the allowable use of a registered generator during maintenance and repair includes the maintenance of a stationary backup generator that has not experienced an engine failure. These are routine or short-term maintenance activities that would only be expected to last a few days. Situations where the stationary backup generator must be taken out of service for longer periods due to engine failure will be addressed in a different provision.

Staff is proposing to extend the time that registered generators may power a stationary source during an electrical upgrade from 60 days to 90 days. Several stakeholders have explained these operations often last longer than 60 days, and they might not be able to obtain a district permit within that time. CARB is proposing to address this challenge by extending the allowable time to 90 days with a possible further extension if authorized in writing by the local district.

Staff is proposing to add a provision that would allow generators registered in PERP to serve as a temporary replacement to a stationary back-up generator that has experienced an engine failure. These scenarios could be allowable under the maintenance and repair provision, but they have been handled differently depending on the district in which the engine failure occurs. Some districts allowed a registered engine to serve as a temporary replacement with no additional requirements. Other districts have required the source to obtain a permit for the temporary replacement engine or to modify the existing stationary engine permit. Staff believes this temporary replacement of a stationary backup generator due to an engine failure is an allowable use of the Program, but also recognizes the local air districts' authority to regulate stationary sources. Therefore, staff is proposing language that identifies the allowable use of a registered generator in this situation, but only upon the approval from the local air district, and only if certain conditions are met. These conditions were discussed during numerous meetings with representatives of industry and California Air Pollution Control Officers Association (CAPCOA).

Staff is proposing to add a restriction for Change of Ownership applications. These applications will not be accepted within 6 months prior to the phase-out dates for engines as specified in the Portable Engine ATCM. A separate schedule will be added for flexibility engines for clarity and to allow more recently produced flexibility engines to be sold to other fleets up to 6 months prior to phase-out. This restriction will prevent fleets from selling imminently noncompliant engines to other fleets within the State. This supports the goal in the Portable Engine ATCM of moving older, high-emitting engines out of California, where maintaining air quality is a greater challenge.

Staff is proposing to add a requirement for designating Tier 3 engines as low-use or emergency-use. Low-use and emergency-use engines are exempt from the emission control strategies in the Portable Engine ATCM, and staff anticipates that many fleet owners will want to designate engines to keep them in service beyond the phase-out dates. This provision will require that for Tier 3 engines, the fleet owners newly must designate only in January and submit hour meter readings taken at the beginning of that month. The low-use restriction is an hourly limitation on a calendar year basis, so it makes sense that fleets start tracking hours for these engines at the beginning of the year. This requirement follows similar low-use designation requirements in the Truck & Bus Regulation and the Off-Road Fleets Regulation.

## Section 2455: General Requirements

Staff is proposing to modify the prohibition in subdivision (a) that prohibits the operation of registered engines or equipment units from interfering with the attainment or maintenance of any California or federal Ambient Air Quality Standard (AAQS). A provision will be added to give districts with the status of extreme non-attainment for ozone the ability to review the emissions impacts from large projects. This gives those districts the ability to determine if certain large projects are affecting their attainment status. If it is found that the operation of the large project causes an exceedance of an AAQS, then the districts will have the ability to mitigate the emissions from the project. Therefore, this amendment provides an enforcement mechanism for the current prohibition in subdivision (a), where none previously existed. Under this proposed provision, the person responsible for an onshore project that includes over 2,500 PERP-registered bhp at startup would have to notify the district 14 days prior to operation, except for projects that are working on an emergency for which notification must be done within 72 hours. For projects that start with less than 2,500 bhp, but then increase in size to over 2,500 bhp, the notification must be done within 72 hours of exceeding the 2,500 bhp threshold. Projects operating to alleviate the threat from an emergency event would be exempt per the existing language in section 2455(c). The 2,500 bhp threshold is based on an estimate of how much Tier 2 horsepower it would take to emit 100 lb/day of NO<sub>x</sub>, which is the “Threshold of Emission Significance” in one of the affected districts. The calculation for this estimate is shown in Appendix F. Projects in remote locations and projects exclusively using Tier 4 engines are not expected to ever impact an AAQS, and therefore will be exempt from notification. In addition, notification will include any CEQA approval documents so that the districts can verify if the engine emissions have been included in that approval. If the engine emissions have been approved and/or mitigated through the CEQA process, the districts should not need to take any further action on the project. Once notification is given, the districts could request additional information to perform an Air Quality Impact Analysis (AQIA) to determine the emission impacts from the project. If those impacts are shown to cause an exceedance of an AAQS, registrations become invalid which then gives the districts the authority to mitigate the emissions from the project. South Coast AQMD has prepared a white paper in which they outline their plans for the implementation of this provision which is also included in Appendix F. This project review and mitigation is almost identical to the existing provisions in the PERP Regulation for projects operating in State Territorial Waters (STW).

Staff is proposing to modify the provision for emergency events in subdivision (c). The existing provision allows any engine to enter California to help alleviate the threat to public health during an emergency event. These engines are considered registered and exempt from all requirements of the PERP Regulation for the duration of the emergency event. When this provision was written, it was envisioned that it would be used during emergency events such as earthquakes, wild fires, and major flooding. The duration of these events are relatively short term, so the additional equipment would have little economic and emissions impact. With the recent drought in California, many water well drilling rigs have been brought in from out of State to pump more ground water, and have been operating here for several years. Many of these out-of-state drilling rigs have uncertified engines. The existence of these rigs for the extended time has put the

California-based water well drilling industry at an economic disadvantage. They cannot compete against businesses that neither have to meet emission standards, nor pay permit fees for an extended length of time. In addition, the presence of these rigs with uncertified engines for the extended time has a greater emissions impact than expected when this provision was originally written. Therefore, staff is proposing to limit the engines allowed to enter California during an emergency event to only those that are certified to an emission standard, and they would only be considered registered for one year. They would have to obtain permits or registrations for any declared emergency event that lasts longer than one year. In order to prove the engines are certified, the operator would have to include the engine family name as part of the notification. Even with a permit or PERP registration, the equipment would continue to be exempt from the emission requirements in the PERP Regulation and the Portable Engine ATCM for the duration of the emergency event.

### Section 2456: Engine Requirements

Staff is proposing to modify the initial registration eligibility requirements in subdivision (f)(1). The language will specify that an engine must be certified to the most stringent standard in order to be eligible. The existing phrase of “meet the most stringent standard” has led to some engine owners expecting to be eligible with emissions equivalent to the standard, which is not the intent of this provision. This revision follows the eligibility requirement in the Portable Engine ATCM that states engines must be certified to the standard. In addition, the subdivision will be reformatted for clarity which will now list the engines that are eligible. Eligibility requirements will be aligned to those being revised in the Portable Engine ATCM such as the revision for flexibility engines and the removal of eligibility for engines built to the previous tier for 6 months after a tier change.

Staff is proposing to add a category to the initial registration eligibility requirements in subdivision (f)(1). Engines approved for use in hazardous locations per federal law may be registered in PERP if they are certified to Tier 3 standards. These engines will be exempt from the Portable Engine ATCM, and representatives from CAPCOA have stated that they would prefer to have these engines registered in PERP. Staff expects that there will only be a small number of these engines as they are more expensive than final Tier 4 engines and will have limited applications for use in the field.

Staff is proposing to modify the fuel requirement in subdivision (f)(3) to align with the fuel requirement of the Portable Engine ATCM. The current fuel requirement in the PERP regulation specifies the use of motor vehicle fuels. This requirement has been interpreted as diesel meant for on-highway vehicles. Staff believes it is appropriate to use red-dyed off-road diesel in portable engines, which is allowed by the fuel requirement in the Portable Engine ATCM.

Staff is proposing to remove all the emission limitations and extensions applicable to uncertified engines. These requirements were obsolete as of January 1, 2017, and should be removed.

Staff is proposing to add an exemption for engines used on two-engine vehicles. The engines on these vehicles must comply with the applicable requirements of the Regulation for In-Use Off-Road Diesel-Fueled Fleets, so they should be exempt from all the requirements of section 2456, except for the visible emission limitation.

Staff is proposing to add a limitation for engines approved for use at hazardous locations. Once they are registered, they will only be allowed to operate under PERP until January 1, 2029, which is the final phase-out date for Tier 3 engines in the Portable Engine ATCM. Up until this time, they can be operated in the State just like any regular Tier 3 engine. After that date, they may continue to operate if they obtain permits from the local air districts. After the phase-out date for Tier 3 engines, these engines should only be operating at hazardous locations because Tier 4 engines approved for hazardous locations may not exist, and it is not environmentally beneficial to let Tier 3 engines to operate at regular locations when regular Tier 4 engines are available. The local districts are better equipped than CARB staff to verify in the field that the engines are being operated in locations that are actually hazardous and that the engines have the proper approval.

#### Section 2458: Recordkeeping and Reporting

Staff is proposing to add an exemption for engines used on two-engine vehicles. The engines on these vehicles must comply with the applicable requirements of the Off-Road Regulation, so they should be exempt from the requirements of section 2458.

Staff is proposing to modify the recordkeeping requirements for rental businesses. These changes are being made to accommodate the normal business operations of the rental industry. Instead of a single operating log to be maintained on a calendar year basis, separate logs may be kept for each rental transaction. The rental agreement or equivalent document will no longer be kept on the jobsite, but must be provided to enforcement staff within 2 business days after the request. Records of each rental transaction may be kept by company identification numbers instead of registration number, as long as the rental business has a way to cross reference company identification number and registration number.

Staff is proposing to modify the annual reporting requirement for local air districts. Only air districts that do not submit all of their inspection reports electronically to CARB will have to submit the written annual report. This prevents redundant reporting from the districts if they have already provided all the information. The annual report will also only be required to contain information about inspections on registered engines and equipment units. Information about the inspections of non-permitted engines and equipment units is not needed by CARB.

Staff is proposing to add a new reporting requirement for registered engines. At the time of registration renewal, the owner must submit an hour meter reading for each engine they are renewing. The reading must be taken within 12 months prior to expiration, and they must specify the date the reading was taken. This reporting takes very little effort by the engine owner, and the information can further enhance the statewide emission inventory for portable engines.

### Section 2459: Notification

Staff is proposing to remove the notification requirement for rental transactions exceeding 9 months in duration. Representatives from both the rental industry and CAPCOA agreed that this requirement is no longer needed.

### Section 2460: Inspections and Testing

Staff is proposing to modify the provision for a discounted inspection fee for arranged inspections with multiple engines in subdivision (b)(7). There have been challenges with this provision since it was adopted. Many fleets misunderstand the provision and pay the discounted fee because they think it is based on how many engines they have registered. In reality, the discounted fee should only be paid if a fleet can have 4 or more engines inspected together at the same time. Staff proposes that if a fleet owner fails to qualify for the discount after paying the discount, the district can bill the fleet owners for the fee difference. In addition, fleets can be prevented from having the option of paying the discounted fee in the future at the request of the district, if the fleet violates the inspection fee discount requirements.

### Section 2461: Fees

Staff is proposing to modify subdivision (f) regarding the ability of the Executive Officer to revise the fees. The Executive Officer will be able to increase the fees based on two additional cost categories that support the registration program as described below:

- 1) Consumer price index (CPI) adjustment. This is a standard index used to ensure that the cost of doing business can be recouped. The PERP Regulation already lists the CPI as a basis for increasing fees, so this is not a proposed change.
- 2) Direct Costs. Direct costs include salary and wages plus benefits for direct labor costs associated with this program. In addition, direct costs may also include equipment, contracts, and lab supplies that directly benefit this program.
- 3) Indirect Costs. Indirect costs are expenditures that indirectly support a program. These costs include general administration (i.e., the Executive Office, Chair's Office, Office of Information Technology, and Administrative Services Division), Program Administration (i.e., Division Management and Administrative Support Liaisons), Operating Costs (e.g., general expenses, postage, printing, etc.) and statewide costs that support the control agencies for California (e.g., the State Controller, Department of Finance). These expenditures are calculated as a percentage based on direct personal service costs for the program.

These three categories comprise the costs to run the registration program and are therefore used to calculate the appropriate fees. As salary and wages increase through the collective bargaining agreements, the costs to purchase office supplies increase, the rent expense in buildings increase, and other costs increase, the fees may be adjusted to ensure that the costs to implement the program are recovered.

Staff is proposing to increase the fees collected for registration and inspection because the current fee schedule does not recover the reasonable costs of the program, as described in Appendix E. The increase for CARB program fees will be based on the consumer price index adjustments dated back to the last fee increase of 2004 plus an additional 20% for administrative overhead. By late 2016, the CPI from 2004 is 25.64%, which results in a total increase for CARB program fees of 45.64%. The increase for district inspection fees will be based on the CPI from 2006, which is when they were first included in the PERP Regulation. That CPI increase is 17.73%. These percentages will be applied to each applicable fee and then rounded to the nearest \$5 for inclusion in the PERP Regulation. The material costs of the placards did not increase and will remain at \$5. The proposed new fee for initial registration of an engine will be \$805, which is 29.8% higher than the current fee of \$620. Under this proposal, the fee to be registered in PERP will be \$805 for the first three years, and then \$735 for each 3 year period thereafter. Staff estimates the equivalent fee for an engine to be permitted by a district for 3 years would be over \$2,200. Even with the proposed fee increase, it will be less expensive to register in PERP than to be permitted by the local air districts. A detailed accounting of the fee increase is included in Appendix E.

Staff is proposing to modify some of the existing fees listed in the Regulation. The initial registration fee listed in line 1 of the fee table will also include the placard fee. It makes sense to combine these fees because they are always paid together. The fee to replace an identification device or placard will be split because of the additional material cost of the placard.

Staff is proposing to move the fee table to its own section in new Section 2461.1. Having the specific fees in a separate section will facilitate future fee modifications. All references to the fee table in the regulation have been changed to Section 2461.1.

#### Section 2462: Duration of Registration

Staff is proposing to modify this section to align with the removal of obsolete language related to registration of non-certified engines, Tier 3 engines approved for hazardous locations, and the new emission control strategies in section 93116.3(c)(1) of the Portable Engine ATCM. Registrations will continue to be valid for 3 years from the month of issuance, except for engines approved for hazardous locations and engines that must be removed due to the phase-out requirement of the Portable Engine ATCM.

#### Miscellaneous

Staff is proposing to substitute the word “shall” for the word “must” throughout the regulatory text, as it is more precise.

Staff is proposing to substitute the word “subsection” for the word “subdivision” throughout the regulatory text, as it is more precise.

Staff is proposing to modify the language throughout the regulation regarding fees being submitted. Fees will no longer be due with the submittal of application forms. They will be due upon request from the Program.

### III. AIR QUALITY

This Chapter describes the expected criteria pollutant emissions benefits associated with the Portable Regulatory Amendments. There are no expected greenhouse gas emissions impacts. The Portable Regulatory Amendments restructure the compliance with the Portable Engine ATCM and staff anticipates a delay in the originally projected, but currently infeasible, emission reductions.

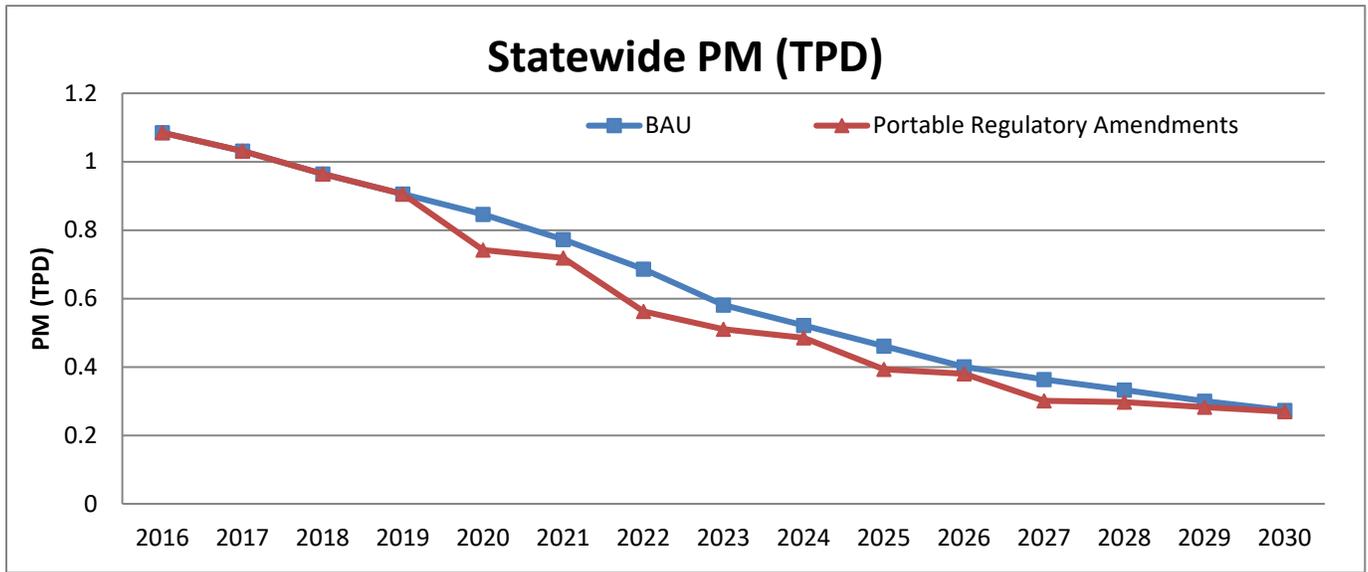
#### A. Criteria Pollutant Emissions

The Portable Regulatory Amendments are intended to maximize compliance rates by simplifying implementation for both fleets and CARB while also increasing enforceability, as described above. Because the current ATCM is technologically and economically challenging to meet, many fleets are anticipated to operate out of compliance and some fleets may go out of business. The high non-compliance leads to high emissions which affect the health of individuals in California, operators of the portable equipment, and the environment. The business as usual scenario (BAU), used as a baseline for the economic analysis, described in Appendix C and illustrated in figures 1 and 2 below, assumes the ATCM 2020 fleet average standards are implemented and enforced. This BAU attempts to forecast a real world scenario using current portable fleet emission values, costs of compliance, and historic fleet operating behavior that forecasts most existing fleets to operate out of compliance.

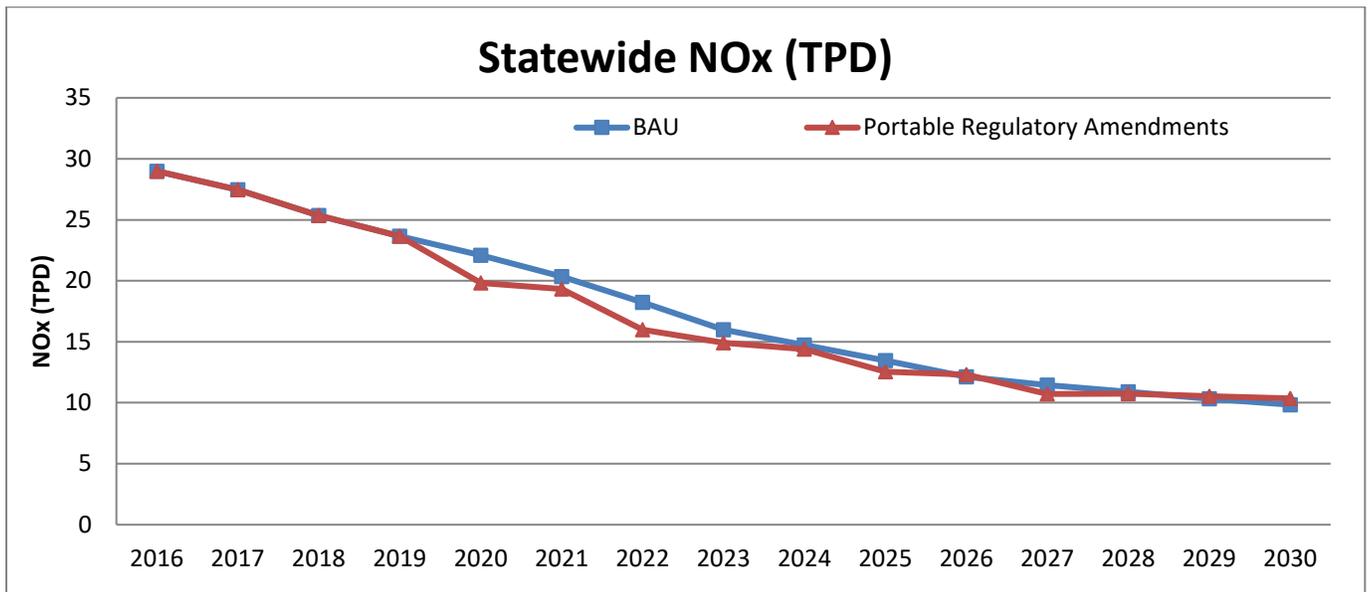
The Portable Regulatory Amendments are achievable and enforceable resulting in compliance rates which reduce both PM<sub>2.5</sub> and NO<sub>x</sub> emissions compared to the BAU, providing benefits to California.

Figures 1 and 2 plot the emissions of NO<sub>x</sub> and PM from portable engines under the baseline scenario vs. the Portable Regulatory Amendments. In 2020, CARB estimates an emission reduction of 0.10 tons per day (tpd) of PM and 2.3 tpd of NO<sub>x</sub> under the Portable Regulatory Amendments compared to the BAU. 2023 is a key year for attaining the National Ambient Air Quality Standard (NAAQS) for ozone in the South Coast air basin, and CARB estimates emission reductions in 1.2 tpd of NO<sub>x</sub> compared to the baseline in this year. NO<sub>x</sub> is a contributor to ozone formation, so the Portable Regulatory Amendments are anticipated to assist in meeting the 2023 NAAQS. These figures show that CARB projects the Portable Regulatory Amendments will prevent emissions of 218 tons of PM and 2,872 tons of NO<sub>x</sub> between 2017 and 2030 compared to the BAU.

**Figure 1: Statewide PM TPD by Year**



**Figure 2: Statewide NOx TPD by Year**



## Health Impacts

To estimate the health risk associated with diesel PM emitted from portable diesel engines registered in PERP, staff determined the potential statewide cancer risk from ambient concentrations of diesel PM and then multiplied by the proportion of diesel PM that can be attributed to portable diesel engines. CARB staff selected the South Coast Air Basin ambient air diesel PM concentrations to anticipate the potential statewide cancer risk from portable diesel engines in California based on the PERP registration database reflecting approximately 40 percent of the engines registered in PERP have South Coast AQMD designated as their home district, or the district in which the engine operates the majority of the time.

**Table 4: Historic and Projected South Coast Basin-Wide Cancer Risks (Chances per Million) from Portable Diesel Engines for Selected Years**

Rule Scenario	2012	2017	2020	2021	2023	2027	2030	2031
All Diesel PM Sources	831	546	427	380	335	299	288	287
BAU	48	35	29	26	21	13	10	9
Proposed Regulatory Amendments	48	35	25	24	18	11	9	9

Table 4 provides the potential cancer risk reflective of years 2012, 2017, 2020, 2021, 2023, 2027, 2030, and 2031 in respect to the four risk scenarios of: the BAU, the Proposed Regulatory Amendments, and the two alternatives.

The Portable Regulatory Amendments are a more enforceable and achievable scenario that provides relief from the current ATCM and results in higher compliance rates with a net decrease in emissions when compared to the BAU. This would result in a reduction of potential cancer risk associated with portable diesel PM engine emissions earlier than the BAU scenario in the South Coast Air Basin.

Using the earlier assumption that the South Coast Air Basin would represent an upper bound estimation of the risks statewide, it is reasonable to conclude that the potential cancer risk associated with portable diesel PM engine emissions under the Proposed Regulatory Amendments would also achieve an earlier potential cancer risk reduction statewide compared to the BAU scenario. A detailed explanation of the health risk calculation is provided in Appendix G.

## Summary of Emissions Calculation Methodology

Staff designed the equipment turnover model to calculate emission and cost implications of this proposal and several alternatives. The most defining characteristic of the model is that it simulates future populations for each fleet in the state individually. The model reads the characteristics of an individual fleet and then simulates a future for that fleet keeping those characteristics intact to preserve its unique equipment retiring and purchasing habits. Broadly, this method can be described as finding the average

age of equipment in a fleet in a baseline year (before the impacts of the Portable Engine ATCM). The model then forecasts future year populations by retiring the oldest engines in the fleet and replacing them with newer equipment until the average age of the fleet is consistent with the average age observed in the baseline case. This is done for all fleets separately and is in contrast to methods that model all fleets in aggregate form. This fleet methodology is often referred to as a 'bottom up' methodology. An individual fleet model allows for more detailed simulations and results, greater quality assurance, and provides a particularly detailed assessment of regulatory and amendment scenarios. Further details, and a lengthy description of the modeling methodology with all steps, are available in Appendix I.

## **B. GHG Emissions**

Staff has concluded that there is no change in GHG emissions as a result of the Portable Regulatory Amendments because the proposal is not impacting any change in efficiency or fuel usage of portable engines.

#### **IV. ENVIRONMENTAL ANALYSIS**

CARB, as the lead agency for the Portable Regulatory Amendments, prepared an environmental analysis (EA), attached as Appendix J, in accordance with CARB's regulatory program certified by the Secretary of the Natural Resources Agency (Cal. Code Regs. (CCR), tit. 14, § 15251(d); 17 CCR §§ 60000-60008). Public agencies with certified regulatory programs are exempt from certain California Environmental Quality Act (CEQA) requirements, including but not limited to preparing environmental impact reports (EIR), negative declarations, and initial studies (Pub. Resources Code (PRC), §§ 21000, et seq., 21080.5; 14 CCR § 15250).

When the Portable Engine ATCM was first approved in 2004, along with the modifications to the PERP Regulation, the Staff Reports included a chapter that was the substitute equivalent of a negative declaration, which analyzed the reasonably foreseeable environmental impacts of the methods of compliance (PRC § 21159, 14 CCR § 15187). The analyses concluded the adoption of the Portable Engine ATCM and the amendments to PERP Regulation, and the reasonably foreseeable methods of compliance with these regulations, would not result in any adverse environmental impacts. They also concluded the regulations would lead to significant air quality and health benefits from the reduction of diesel PM and NOx. When the Board approved the regulations in 2004, it found that no significant adverse impacts would result. When the two regulations were amended in 2007 and 2010, the Staff Reports concluded the changes would not result in any adverse impacts on the environment, and the Board again adopted findings of no significant adverse environmental impacts. These previous analyses are incorporated by reference.

When an agency proposes changes to a project for which a negative declaration has previously been adopted, the agency must determine whether the changes are substantial and will require major revisions to the previous negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (14 CCR § 15162(a)(1)). Staff has determined no major revisions to the prior negative declaration equivalent documents are required nor is the equivalent of an EIR required for these amendments because the proposed changes do not lead to any new significant environmental effects or a substantial increase in the severity of previously identified significant effects. CARB, therefore, has prepared an EA presented in Appendix J that explains the agency's decision to not prepare a subsequent negative declaration equivalent document or substitute for an EIR. CARB used the resource areas from the CEQA Guidelines Environmental Checklist as a framework for analyzing the changes and determining the amendments do not involve new significant environmental effects or a substantial increase in the severity of previously identified effects, including no significant adverse impact to air quality. This EA is supported by data and information in the entire Staff Report and rulemaking record.

If comments received during the public review period raise significant environmental issues related to the EA, staff will summarize and respond to the comments in the Final Statement of Reasons (FSOR) prepared for the Portable Regulatory Amendments. If the amendments are adopted, a Notice of Decision will be posted on CARB's website and filed with the Secretary of the Natural Resources Agency for public inspection (17 CCR § 60007(b)).

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## **V. ENVIRONMENTAL JUSTICE**

State law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. Gov. Code § 65040.12(c), CARB is committed to making environmental justice an integral part of its activities. The Board approved its Environmental Justice Policies and Actions (Policies) on December 13, 2001, to establish a framework for incorporating environmental justice into CARB's programs consistent with the directives of State law (ARB 2001). These policies apply to all communities in California, but recognize that environmental justice issues have been raised more in the context of low-income and minority communities.

The Portable Regulatory Amendments follow the goals of the current PERP Regulation and the Portable Engine ATCM to reduce emissions of air pollutants and the associated health risks over time statewide in all communities throughout the state, including low-income and minority communities.

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## **VI. ECONOMIC IMPACTS ANALYSIS**

### **A. Legal Requirements**

Sections 11346.3 and 11346.5 of the Government Code require State agencies to assess the potential for adverse economic impacts on California business enterprises and individuals when proposing to adopt or amend any administrative regulation. The assessment will include consideration of the impact of the proposed regulation on California jobs, business expansion, elimination, or creation, and the ability of California businesses to compete. State agencies are also required to estimate the cost or savings to any State or local agency and school districts under instruction adopted by the Department of Finance. This estimate is to include any nondiscretionary costs or savings to local agencies and the costs or savings in federal funding to the State.

Government Code section 11346.36(f), requires a state agency to perform a Standardized Regulatory Impact Assessment (SRIA) before adopting any major regulation. A major regulation is defined as a regulation that will have a potential cost to California business enterprises exceeding \$50 million in any single year. Because the estimated cost of the amendments exceeds \$50 million in a single year, the Portable Regulatory Amendments constitute a major regulation.

This chapter presents results from analyses that estimate the cost benefit impacts of the Portable Regulatory Amendments. The SRIA as initially submitted to the Department of Finance in March 2017 is attached as Appendix C-1 and available at: [http://dof.ca.gov/Forecasting/Economics/Major\\_Regulations/Major\\_Regulations\\_Table/](http://dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/) The SRIA was revised in response to comments from the Department of Finance, and is attached as Appendix C-2.

### **B. Businesses Affected**

The Portable Regulatory Amendments directly benefit a wide-range of businesses that vary in size, revenue, type of equipment, and many other factors. About 94 percent of all registered fleets in PERP, or about 4,205 fleets, are privately owned. Examples of business types that use portable engines include rental companies, construction businesses, landscaping companies, and government agencies. This proposal provides flexibility to all regulated businesses by spreading out costs and providing the time to finance fleet upgrades to meet regulatory requirements.

### **C. Methodology for Estimating Costs**

#### **1. Analysis of the PERP Registration Data**

Staff conducted an analysis of the PERP database that existed in December 2015 in order to evaluate the cost impacts from the Portable Regulatory Amendments. Based on the analysis, staff determined that there are over 4,400 fleets with about 33,000 engines registered in PERP, of which about 30,000 are subject to the portable engine ATCM. Approximately 78% of fleets would fall under the small fleet category (as proposed). Small fleets represent about 8% of the total horsepower from all PERP registered engines.

## **2. Equipment Turnover Simulation Model**

The business as usual scenario (BAU) used as a baseline is based on projected fleet compliance rates under the current ATCM. The BAU accounts for the fraction of fleets forecasted to be operating out of compliance due to the technologically and financially challenging 2017 and 2020 fleet average emission standards set by the current ATCM. An in-depth description of the BAU is included in Appendix C.

The major cost of compliance with the current regulation is the engine and equipment replacement costs to all fleets. Staff calculated this cost by projecting annual fleet engine purchases for the Portable Regulatory Amendments and taking the difference of those expenditures with the engine expenditures anticipated under the current requirements. These expenditures were estimated using CARB's equipment turnover model which simulates annual engine and equipment purchases by each individual fleet based on each fleet's purchasing habits and compliance requirements. Staff used the following inputs in the model (the inputs are described in great detail in Appendix C): (a) Equipment Cost; (b) Fleet Compliance Path Selection; (c) Fleet Purchasing Habits; and (d) Fleet Decision-making Process. A detailed description of the model exists in Appendix I.

Staff applied direct costs and cost savings to the model outputs. Direct costs include equipment costs, diesel exhaust fluid (DEF) costs, and increased registration fees. Direct cost-savings include decreased enforcement fines compared to the BAU, where high non-compliance is anticipated. Because fleets are expected to comply with the Portable Regulatory Amendments, enforcement fines that would be incurred under the BAU are no longer incurred, resulting in a cost-savings. These direct costs and cost savings are described in more detail in Appendix C.

## **3. Total Costs**

The Portable Regulatory Amendments are expected to result in a direct cost savings of \$233 million from 2017 through 2030 for all fleets. In earlier years, fleets experience an additional cost compared to the BAU, as a result of more fleets coming into compliance. Cost-savings in later years are primarily driven by enforcement penalty cost-savings. These cost-savings are very difficult to predict, and have high uncertainty. Dividing the net cost-savings of approximately \$233 million by 4,473 (the number of fleets registered in PERP) gives an average cost-savings per fleet of \$52,000 from 2017 through 2030, or an annual cost-savings of \$3,700 per fleet.

## D. Cost-Effectiveness

The cost effectiveness in terms of dollar per pound (\$/lb) of emission reduction achieved is expected to be \$160.20/lb PM and \$8.50/lb NOx. These cost effectiveness values are among the highest when compared to previous measures adopted by CARB as shown in Table 5 below.

**Table 4: Cost-effectiveness Compared to Previously Adopted CARB Regulations (in 2016 dollars)**

Rule	NOx (\$/lb)	PM (\$/lb)	Source of Estimate
Stationary Compression Ignition Engine ATCM	\$1.96	\$20.09	(ARB, 2003) <a href="https://www.arb.ca.gov/regact/statde/isor.pdf">https://www.arb.ca.gov/regact/statde/isor.pdf</a>
In-Use Off-Road Diesel Vehicle Regulation	\$4.74	\$83.87	(ARB, 2010) <a href="https://www.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf">https://www.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf</a>
Public Fleet Rule	\$14.10*	\$195.40	(ARB, 2005) <a href="https://www.arb.ca.gov/regact/dpmcm05/isor.pdf">https://www.arb.ca.gov/regact/dpmcm05/isor.pdf</a>
Diesel Auxiliary Engines on Ocean-Going Vessels at Berth in California Port	\$3.70	\$199.68	(ARB, 2007) <a href="https://www.arb.ca.gov/regact/2007/shorepwr07/isor.pdf">https://www.arb.ca.gov/regact/2007/shorepwr07/isor.pdf</a>
Portable Regulatory Amendments	\$8.50	\$160.20	See Appendix L

\*Combined HC + NOx

Cost effectiveness is determined by dividing the total regulatory compliance cost by the total pounds of diesel PM and NOx reduced during the years 2017 to 2040. The calculation of cost effectiveness is detailed in Appendix L. The values of cost effectiveness of these amendments for PM and NOx are high when compared to other CARB regulations due to the following factors:

- The Portable Engine ATCM already requires fleets to purchase the cleanest equipment; fleets are generally prohibited from purchasing used equipment.
- Most Tier 0 engines, which had the highest potential emission reductions for the lowest replacement cost, have already been phased out of the portable sector since 2010.
- Retrofitting existing engines and repowering existing equipment provide similar emission reductions in PM as equipment replacement for significantly lower costs to fleets. However, retrofit and repower were an option in other regulations but did not become viable options in PERP.

- When cost effectiveness was calculated for other diesel regulations, like the Off-Road Regulation, Tier 4 engines had not yet been manufactured or sold. CARB used the best information available which lead to the assumption that a Tier 4 engine would cost the sum of the cost of a Tier 3 engine and the cost of a retrofit for a similar sized engine. The cost of a Tier 4 engine was assumed to be ten percent higher than that of a Tier 3 engine. Tier 4 engines are now sold on the open market for twice as the cost of a Tier 3 due to re-engineering costs.
- The Portable Engine ATCM already requires replacement with current Tier technology, so use of lower tier engines has been restricted for a long period of time. As a result, the fleets in PERP contain cleaner engines than fleets subject to other CARB regulations; therefore equipment replacement is less cost effective.
- Many fleets purchased equipment with Tier 3 and Tier 3 flex engines on the assumption they could be retrofitted. That equipment will ultimately need to be replaced with Tier 4 because retrofits are not available.

Equipment replacement with Tier 4 engines is the only viable path to reduce fleet emissions for the portable sector which is composed of all certified engines with relatively low emission rates. The low cost effectiveness of the Portable Regulatory Amendments can be attributed to the high equipment replacement cost coupled with the relatively low emission benefits from replacement of relatively newer equipment.

### **E. Potential Impacts on Small Businesses**

Given a typical non-governmental small fleet with 750 total horsepower, the Portable Regulatory Amendments would result in an annual cost savings of approximately \$366 per year.

### **F. Potential Funding for Portable Engine Replacement**

In 2015, Governor Brown signed Senate Bill (SB) 513 (Beall, stats. 2015, ch. 610) to update the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) guidelines by July 1, 2017. The updated Carl Moyer Program guidelines and the Portable Engine ATCM amendments will provide additional grant funding opportunities for cleaner-than-required engines and equipment for projects subject to the Portable Engine ATCM. This funding is available for achieving reductions required by the regulation at least three years prior to regulatory compliance deadlines and for reductions not required by the regulation. The local air districts will select which projects to fund and administer the grants.

Companies or individuals with PERP registered or locally permitted portable engines who may not qualify for Moyer but who need financial assistance to upgrade or replace their engines, may be able to obtain subsidized loans either through the California Pollution Control Financing Authority's small business assistance programs or through the Small Business Administration.

## **G. Potential Impacts on Public Agencies**

### **1. Local Government**

There are two separate roles local government agencies assume in PERP. Many local government agencies register their portable equipment units in PERP. In this role they are acting as the registrants being affected by the high replacement cost of Tier 4 engines and the increased registration fees. In the second role, local government is represented by the 35 local air districts that also regulate portable equipment and enforce the PERP registrations. A portion of the registration fees in PERP is distributed to the local air districts and represents the district inspection fee.

Staff estimates the local government agencies would experience cumulative cost savings of approximately \$11 million ( $\$233 \text{ million} \times 0.048$ ) between 2017 and 2030. This was calculated by multiplying the overall annual costs (\$233million) with the proportion of horsepower registered by local agencies in PERP (4.8%).

The increase in registration fees will increase district revenue. In total, the air districts may see an increase in revenue of approximately \$684,184 per year on average (between 2017 and 2030) to compensate for the costs of performing inspections.

### **2. State government**

State government comprises about 1 percent of the total government registered horsepower in PERP, thus should face an average annual cost savings of approximately \$2.33 million ( $\$233 \text{ million} \times .01$ ) across all state agencies.

### **3. CARB**

The proposed increase in registration costs will increase the revenue to support the PERP by \$125 for each new registration and \$105 for a renewal of each registration. Aside from registration and renewal costs, additional registration actions costs will increase by 46%. Additional registration actions include document and sticker replacement requests.

California HSC Section 41750, et seq., established PERP as a self-funded program. However, in recent years, it became apparent that the program is currently both underfunded and understaffed. The proposed fee increases would pay for materials needed to implement the new requirements; additional information technology (IT) resources to support program implementation; compliance assistance materials and tools; and additional staff. The implementation of the Portable Regulatory Amendments increases resource needs for IT to accommodate adaptive change work on the data management system (DMS) necessary to implement the new amendments. Additionally, these changes will ensure the program will be able to handle the additional registrations that will be processed for large fleets choosing the fleet average option since they will now need to register all their portable engines in PERP. Once the proposed fee increases are in place, CARB will propose a budget change proposal to obtain the staffing and resources necessary to implement the program and amendments consistent with State law.

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## **VII. EVALUATION OF REGULATORY ALTERNATIVES**

California Government Code section 11346.2 requires CARB to consider and evaluate reasonable alternatives to the proposed regulatory action and provide reasons for rejecting those alternatives. This section discusses alternatives evaluated and provides reasons why these alternatives were rejected. Staff did not find any of the alternatives considered to be more effective in carrying out the purpose for which the proposed regulatory action is proposed or to be as effective as, or less burdensome, to affected businesses than the proposal.

In evaluating these alternative approaches to the Portable Regulatory Amendments, CARB staff found that none were as, or more, effective than the current proposal in providing temporary relief to the affected industry from the upcoming 2017 and 2020 fleet emission standards, while preserving the diesel PM emission reductions. The following sections present each alternative considered. More detailed cost analysis of alternatives is included in Appendix C, and in the environmental and economic analyses.

### **A.18 Year Equipment Life with Relaxed Fleet Average Standards (Alternative 1)**

This alternative considers a scenario with delayed tier phase-out dates and relaxed fleet average option standards which will allow older engines to operate longer, especially large fleets that opt-in to the fleet average standards. This scenario is less stringent than the Portable Regulatory Amendments by allowing older engines to operate longer. This alternative is not as costly for fleets but results in fewer emission reductions compared to the Portable Regulatory Amendments.

This alternative was rejected because the Portable Regulatory Amendments will result in higher emission reductions while attaining economic feasibility. The lower cost to businesses offered by this alternative comes at a cost of higher statewide emission rates between 2020 and 2028. This alternative would result in an additional 1.1 tpd of NOx and 0.06 tpd of PM statewide compared to the Portable Regulatory Amendments for that year.

### **B. Tiers 1-3 Phase-out by 2025 (Alternative 2)**

Alternative 2 considers a scenario in with accelerated tier phase-out and fleet average schedules compared to the Portable Regulatory Amendments and would result in higher emission reductions with additional costs to affected businesses.

The Portable Regulatory Amendments phase-out most Tier 1-3 engines by 2025 while Alternative 2 phases out all Tier 1-3 engines by 2025, thus reducing the time to comply by four or more years for some engines (depending upon tier and year of manufacture). In Alternative 2, the final compliance date is two years earlier for large fleets and four years earlier for small fleets than in the Portable Regulatory Amendments resulting in a compressed timeframe for compliance and higher compliance costs in those years.

Assuming full compliance, Alternative 2 achieves greater emissions reductions and a greater overall economic benefit than the Portable Regulatory Amendments but creates unreasonable compliance costs in 2025. Under this alternative, the costs that fleets would incur in 2025 (the final compliance year) would be greater than the costs of compliance with the 2017 standards in the current ATCM. This high cost could reasonably be expected to be economically unfeasible for fleets driving them to operate out of compliance. Compliance rate uncertainty with the 2025 standards could result in higher emission rates than projected and enforcement fines to fleets. Since many of the engines requiring replacement in 2025 are certified under flexibility provisions of the standard and were purchased after 2009, fleets would need to replace equipment much more quickly than originally envisioned. Given the high cost of equipment, age of equipment being replaced, and the number of engines requiring replacement in 2025, it is necessary to spread compliance costs over several years in order to allow fleets to be able to make the necessary investments to meet regulatory requirements. The portable amendments spread these costs over several years, Alternative 2 does not.

## **VIII. RELEVANT FEDERAL REGULATIONS**

The Portable Engine ATCM was developed to establish in-use requirements for portable diesel engines. It is these in-use requirements that are being amended in this proposal. The Portable Engine ATCM relies on, references, and implements the federal emission standards for new off-road engines. Specifically, staff has revised fleet emission standards, incorporating the federal emission standards, and the timeline for meeting them, consistent with Section 202(a) of the Clean Air Act. The proposed standards are technologically feasible in the timeline proposed as Tier 4 technology continues to emerge into the portable engines sector.

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## **IX. PUBLIC PROCESS FOR DEVELOPMENT OF PROPOSED ACTION**

Before notice was given of these Portable Regulatory Amendments, staff held eight publicly noticed workshops between March 2016 and November 2016, at which staff gave presentations on specific amendment topics and solicited comments and feedback from affected stakeholders. The workshops were held at the locations below:

- March 3, 2016 at the San Joaquin Valley Air Pollution Control District Central Region Office in Fresno
- March 8, 2016 at the South Coast Air Quality Management District in Diamond Bar
- March 10, 2016 at the CAL/EPA in Sacramento
- June 30, 2016 at the CAL/EPA in Sacramento
- September 13, 2016 at the San Joaquin Valley Air Pollution Control District Central Region Office in Fresno
- September 15, 2016 at June 6, 2016 at the CAL/EPA in Sacramento
- September 20, 2016 at the South Coast Air Quality Management District in Diamond Bar
- November 10, 2016 at the CAL/EPA building in Sacramento

Each of these public workshops was announced at least three weeks prior to its occurrence by giving notice at a previous workshop, posting workshop notices online at the program's website (<http://www.arb.ca.gov/portable/perpact/portable-activity.htm>), and posting a notice to the PERP public email list serve (portable), with over 6,000 recipients who may be impacted by these Portable Regulatory Amendments. All the workshops were also broadcast on the internet for meeting participants that could not attend in person. Broadcast viewers could submit comments and questions via email during the workshops so staff could address their concerns, or answer their questions live.

A workgroup of interested stakeholders was formed as the result of staff efforts during the first series of workshops in March 2016, where staff solicited workshop attendees, and online viewers, to participate in said workgroup. The workgroup was comprised of approximately 45 members that represented various industries (oil and gas; water well drilling; general construction; telecommunications; and municipalities); private environmental consultants to industry; CAPCOA members; and staff. During the course of 2016 and early 2017, nine meetings were held with the workgroup, seven were held at CARB's Enforcement Division's location in Sacramento, one meeting was held at CalEPA headquarters building in Sacramento, and one meeting was held at South Coast AQMD headquarters building in Diamond Bar. The workgroup meetings were held at the following locations:

- April 19, 2016 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento, 95828)
- May 4, 2016 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento)
- June 9, 2016 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento)
- August 17, 2016 at CalEPA headquarters building in Sacramento (1001 I Street, Sacramento)
- October 26, 2016 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento)
- March 8, 2017 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento)
- March 30, 2017 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento, Conference Call)
- May 16, 2017 at the South Coast Air Quality Management District in Diamond Bar (21865 Copley Drive, Diamond Bar, Conference Call)
- August 22, 2017 at CARB's Enforcement Division's location in Sacramento (8340 Ferguson Ave, Sacramento, Conference Call)

In addition, staff worked closely with CAPCOA in drafting the Portable Regulatory Amendments. Staff revised the proposed amendments in consideration of the comments received during the public process. Every effort was made to consider all comments and recommendations received. These forums provided staff and stakeholders opportunities to present and discuss initial regulatory concepts and potential alternatives. The timeframe of the workshops and meetings allowed CARB to incorporate comments and alternatives into the proposed amendments. Staff considered stakeholder feedback throughout the regulatory adoption process, including up to the adoption of the final regulation. For additional information on CARB's public process to develop the proposed amendments see Appendix D.

## X. REFERENCES

The following documents are the technical, theoretical, or empirical studies, reports, or similar documents relied upon in proposing these regulatory amendments, identified as required by Government Code, section 11346.2, subdivision (b)(3).

Additionally, each appendix references the documents upon which it relies, as required by Government Code, section 11346.2, subdivision (b)(3).

1. Title 40 CFR 89, Part 1039.625, 2014. US.EPA. <https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol33/pdf/CFR-2014-title40-vol33-sec1039-625.pdf> 2014.
2. Staff Report: Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant. Air Resources Board. <https://www.arb.ca.gov/toxics/dieseltac/staffrpt.pdf> 1998.
3. Risk Reduction Plan to Reduce Particulate Emissions from Diesel-Fueled Engines and Vehicle. Air Resources Board. <https://www.arb.ca.gov/diesel/documents/rrpfinal.pdf> 2000.
4. Rulemaking to Consider the Adoption of a Proposed Regulation for In-Use Off-Road Diesel Vehicles. Modeling the Costs and Emissions Reductions (Appendix H). Air Resources Board. <https://www.arb.ca.gov/regact/2007/ordiesl07/tsdapph.pdf> 2007.
5. Vona, Memo to the File. Discussion of District Penalty Authority for Violations of the Portable Engine ATCM 2020 Fleet Emission Standards. June, 2017.