

## **Appendix J**

### **Environmental Analysis**



## **A. Introduction**

This appendix provides an environmental analysis for the proposed amendments to the Portable Engine ATCM and to the PERP Regulation together referred to as the Portable Regulatory Amendments.

## **B. Environmental Review Process**

ARB is the lead agency for the Portable Regulatory Amendments. This environmental analysis was prepared under ARB's regulatory program certified by the Secretary of the Natural Resources Agency (14 CCR 15251(d); 17 CCR 60000-60008). Under Public Resources Code section 21080.5 of the California Environmental Quality Act (CEQA), public agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to preparing environmental impact reports (EIR), negative declarations, and initial studies (14 CCR 15250). A document used as a substitute for an EIR or negative declaration in a certified program shall include at least: (1) a description of the proposed activity; and (2) either a statement that the agencies review of the project showed the project would not result in any significant adverse impacts and therefore no alternative or mitigation measures are proposed or (b) alternatives to the activity and mitigation measures to avoid or reduce any significant impacts to the environment (14 CCR 15252). The statement of no impact must be supported by a check list or other documentation showing the possible impacts the agency examined in reaching this conclusion (14 CCR 15252).

When the Portable Engine ATCM was first approved in 2004, along with subsequent 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 significant 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<sup>1</sup>, it adopted a finding of no impact. When the two regulations were amended in 2007<sup>2</sup> and 2009<sup>3</sup>, the Staff Reports concluded the changes would not result in any adverse impacts on the environment, and the Board again adopted findings of no 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 impacts or a substantial increase in the severity of previously identified significant impacts, and whether there are changed circumstances or new information of substantial importance that result in new or more severe environmental impacts. (14 CCR 15162(a)(1)). Staff has determined no major

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<sup>1</sup> ARB 2004: <https://www.arb.ca.gov/regact/portreg/isor.pdf>

<sup>2</sup> ARB 2007: <https://www.arb.ca.gov/regact/2007/perp07/isor.pdf>

<sup>3</sup> ARB 2009: <https://www.arb.ca.gov/regact/2010/perp2010/perpisor.pdf>

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 impacts or a substantial increase in the severity of previously identified significant impacts and there are no changed circumstances or new information that result in new or more severe environmental impacts. This appendix, therefore, presents an addendum to the previously adopted negative declaration equivalent documents that explains the agency's decision to not prepare a subsequent negative declaration equivalent document or substitute for an EIR. ARB used the resource areas from the CEQA Guidelines Environmental Checklist as a framework for analyzing the changes and determining they do not involve new significant environmental effects or a substantial increase in the severity of previously identified effects, including no adverse impact to air quality. This chapter is supported by data and information in the rest of the Staff Report.

If comments received during the public review period raise significant environmental issues, staff will summarize and respond to the comments in the Final Statement of Reasons (FSOR) prepared for the proposed amendments to the Portable Engine ATCM and to the PERP Regulation. Written responses to environmental comments on this chapter, if any, will be considered by the Board as part of its action on the proposed amendments (17 CCR 60007(a)). If the amendments are adopted, a Notice of Decision will be posted on ARB's website and filed with the Secretary of the Natural Resources Agency for public inspection (17 CCR 60007(b)).

## **C. Proposed Amendments**

### **1. Background**

In 1997, ARB adopted the PERP Regulation to offer portable equipment owners a permit/registration option recognized in all 35 local air districts. A permit or registration may otherwise be required from each local air district in which the engine/equipment unit was to operate. Under PERP, only the most current tier engines, and engines manufactured under the flexibility provisions (flex engines), are eligible for initial engine registration, with certain exceptions. This requirement does not apply to auxiliary engines on water well drilling rigs, dedicated snow removal equipment, cranes, and privately owned sweepers.

ARB adopted the Portable Engine ATCM in 2004 as part of the Diesel Risk Reduction Plan to protect public health by controlling emissions from nearly all diesel fueled portable engines rated at 50 horsepower and greater operating in California. The Portable Engine ATCM requires subject fleets of engines to meet fleet average emission standards for diesel PM by phasing out older uncertified engines, setting strict engine eligibility for the program, limiting districts to permitting only certified engines, and requiring all fleets to meet fleet emission standards. The local air districts also carry out implementing of the Portable Engine ATCM through their portable permitting programs. The fleet standard compliance dates began in January 2013, and were set to become progressively more stringent in January 2017 and in January 2020 as set out in Table J-1.

Table J-1: Current Portable Engine ATCM Fleet Standards for All Fleets

<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

The standards for 2013 were fully implemented and achieved a 67% reduction in diesel PM emissions and a 39% reduction in NOx emissions compared to 2000 emission levels. However, since the Portable Engine ATCM is a technology forcing regulation, the future year emission standards (2017 and 2020) were based on the best information at the time regarding the expected future availability of cleaner engines.

During implementation of the regulation, staff followed the development and market availability of Tier 4 engines and aftermarket retrofit devices, or Verified Diesel Emission Control Strategies (VDECS). Repowering existing equipment units with Tier 4 engines was a compliance option identified in the original ATCM for some fleets, but later became infeasible due to the larger footprint and configuration of Tier 4 engines. The idea behind repowering was that an older tier engine would be simply removed from an equipment unit and a newer tiered engine would be placed in its existing configuration within the equipment unit package. Tier 4 engines have emission standards significantly lower than Tiers 1-3, and include the installation and use of emission control devices, which did not exist on older tiered 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. The size difference of Tier 4 engines was not considered in 2004 since these engines were not conceptualized yet. ARB received confidential cost data from two equipment manufacturers and one engine manufacturer showing Tier 4 equipment is now twice as expensive as Tier 3 equipment. The cost of new equipment with new engines was not accounted for when the Portable Engine ATCM was adopted because it was expected that the equipment could be repowered with new engines or retrofitted with VDECS. VDECS are not widely available in the portable market, as demonstrated in the PERP inventory, which has only 7 out 30,000 registered engines retrofitted with a VDECS. In addition, the Tier 4 certification standards contain provisions for Averaging, Banking, and Trading (ABT) and Transitional Program for Equipment Manufacturers (TPEM) which allow manufacturers to continue manufacturing a certain amount of engines to the previous tier after a new tier becomes effective. The engines produced under these provisions are known as flex engines. Portable equipment manufacturers prefer building equipment with flex engines because they fit into existing packages making redesign unnecessary. As a result of the flex provisions, a large volume of flex engines were registered in PERP since equipment with Tier 4 engines did not become available for a year or more after each Tier 4 certification standard became effective. In some applications, equipment with Tier 4 engines in the greater than 750 horsepower category is still not available today.

In June 2015, ARB was formally contacted by the affected fleets requesting ARB to revise the 2017 and 2020 requirements due to two main factors: (1) a severe economic hardship of sudden replacement of older tier engines with Tier 4 technology just becoming available; and (2) Tier 4 engines not being available in the large (greater than 750 horsepower) category.

Staff conducted an analysis of the current inventory of portable engines registered in PERP and found that about 38% of engines are Tier 1 and Tier 2 across all horsepower categories. Most of these engines would have to be replaced at the cost of equivalent Tier 4 engines for fleets to become compliant with the upcoming 2017 fleet standard. As fleets needed to purchase new equipment in accordance with their normal turnover schedules, many purchased the Tier 3 flex engines available under the TPEM because Tier 4 engines were not readily available. Unfortunately, new Tier 3 flex engines did not drive down fleets' diesel PM emissions to the degree necessary to comply with the 2017 fleet standards. In many cases, the current 2017 ATCM standards would require fleets that purchased Tier 3 flex engines to replace them after only three to five years of use (when the expected service life of the equipment is at least 20 years). (See Chapter VI of the Staff Report for more details on cost.)

Given the delayed availability and high cost of turnover to Tier 4 engines on the current schedule, staff determined that implementing the existing fleet average emission standards was financially and technologically infeasible. In adopting regulations, ARB is required to consider technological feasibility and cost effectiveness (H&S Code §§ 39602.5, 43013). Although the current standards were based on the best information at the time of adoption, information that has become available over subsequent years has led staff to conclude these standards are not achievable cost effectively. Therefore, staff proposes to revise the standards in the ATCM to ensure implementation of the regulation is cost effective while also ensuring the emission reductions originally intended by the regulation would still occur. During the rulemaking process, staff decided to also address other provisions of the regulation that either needed clarification or to be changed based on other changes in circumstances since 2004.

## 2. Summary of Proposed Changes

A full description of the proposed amendments is available in Chapter II of the Staff Report.

### i. Portable Engine ATCM

The primary proposed changes to the ATCM for this analysis include the change from the diesel PM fleet average emission rate with scheduled compliance dates in 2017 and 2020 to a phase-out schedule based on tier and a fleet average option with compliance dates in 2020, 2023, and 2027. Small fleets, defined as fleets with 750 or less total horsepower, would follow a tier phase-out schedule with later phase-out dates than the large fleet tier phase-out schedule as shown in Table 2. The small fleet tier phase-out schedule will provide additional time to meet regulatory requirements compared to the existing PERP and ATCM regulations and allow for automatic compliance management through the PERP registration process. Large fleets, defined as fleets with over 750 total horsepower, will follow a tier phase-out schedule with accelerated phase-out dates in Table J-2 or follow the fleet average schedule in Table J-3.

Table J-2: Proposed Tier Phase-Out Schedule

<i>Engine Certification</i>	<i>Engines rated 50 to 750 bhp</i>		<i>Engines rated &gt;750 bhp</i>
	<i>Large Fleet</i>	<i>Small Fleet</i>	
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
Flexibility engines (Tier 1, 2, and 3)	December 31 of the year 17 years after manufacture		

Table J-3: Proposed Fleet Average Option for Large Fleets

<i>Compliance Date</i>	<i>Fleet PM Standard (g/bhp-hr)</i>
1/1/2020	0.10
1/1/2023	0.06
1/1/2027	0.03

The fleet average option for large fleets is similar to the standard in place, except the compliance dates are pushed out further into the future due to the delayed availability and high cost of Tier 4 engines and retrofits. The tier-phase out scheme is new and will improve enforceability of the program because older registered engines will automatically lose their registration in ARB's program when that tier is phased out per the schedule and those engines will no longer be legal to operate in California. As discussed further in Chapter II of the Staff Report, both the tier phase out and the proposed fleet averaging options will improve statewide enforceability of the Portable Engine ATCM. Implementation of the tier phase out option will be carried out by the PERP Database Management System (DMS) where automatic cutoff dates will be applied to each registration certificate, and registration sticker, issued for the engine of that applicable tier level. Thus, the fleet owner, engine operator, and air district inspector will be able to identify, in the field, if an engine is compliant with the ATCM. Under the current ATCM, enforcement of the fleet averaging was a challenge because not all portable engines are registered in PERP. Some fleets have district permitted engines that are not tracked in the PERP DMS. Those large fleets choosing the fleet average option must register all their portable engines in PERP. This will allow PERP DMS to track a given fleet's emissions average at a glance and will improve enforcement.

Other proposed changes include: changes to definitions, clarification to applicability, and adding advantageous credits.

ii. PERP Regulation

The proposed changes to the PERP Regulation include language changes to harmonize the registration requirements with the changes in the Portable Engine ATCM.

3. Methods of Compliance

The determination that there are no new significant environmental effects or a substantial increase in the severity of previously identified significant effects is based on analyzing the changes in reasonably foreseeable methods of compliance taken under the proposed amendments compared to what was previously analyzed in the prior documents for the adopted regulations (PRC 21159; 14 CCR 15187, 14 CCR 15162). Please refer to the summary of proposed amendments in Chapter II for a full description of each proposed change. Changes that are more administrative in nature and undertaken to improve implementation of the regulation, but have no potential to affect the physical environment, are summarized only at a high level. This section focuses in more detail on the amendments that could lead to changes in compliance actions that have the potential to affect the physical environment (e.g. air quality).

A. Portable Engine ATCM

i. Changes to Applicability

Changes in the applicability section (§ 93116.1) include exempting certain engines already covered by other regulations. Harmonizing changes for the definitions of these engines are made in the definitions section. The exemption for agricultural engines causes no change in implementation of the ATCM standards and is administrative because these agricultural-use engines are already separately regulated by the local districts under SB700. (Florez, Stats. 2003, ch. 479.). There is also a proposed addition of an exemption for engines on two-engine vehicles subject to the In-Use Off-Road Diesel Fueled Fleets Regulation so these engines are not subject to two emission control regulations. (California Code of Regulations, title 13, section 2449) This proposed change does not change implementation of the ATCM standards because it is simply clarifying these engines are subject to the Off-Road Regulation. There is also a proposed change regarding the exemption for engines used exclusively on harborcraft subject to the Commercial Harborcraft Regulation. This change is administrative because it clarifies the existing exemption from the ATCM for these engines as stated in the Commercial Harborcraft Regulation. (California Code of Regulations, title 17, section 93118.5(b)(2).)

There is a proposed change to revise the language to the existing exemptions for two-engine cranes and two-engine water well drilling rigs. This change is administrative because it clarifies the existing exemption from the ATCM.



A proposed change to remove the exemption for portable engines used at airports in the South Coast AQMD would subject these engines to the ATCM requirements, which is not expected to result in any changes since these engines were regulated locally. The conditions on which this exemption was based, no longer exist, so this exemption has become invalid.

There is also a proposed change to include the exemption of engines used exclusively in emergency events to alleviate the threat to public health and safety. There is an existing exemption from the ATCM for these engines as stated in Section 2455(c) of the PERP Regulation, so this change in the ATCM is to clarify that existing exemption and harmonize the two regulations.

## ii. Changes to Definitions

There are several proposed changes to the definitions section (§ 93116.2) that clarify several definitions to improve implementation of the regulation. These changes are primarily administrative in nature in that they clarify applicability of the regulation and ensure expected emission reductions occur.

There are also proposed changes to the definition for “Low-Use” engines discussed more below under “Changes to Requirements.”

## iii. Changes to Requirements

### a. Fleet Requirements

The primary proposed change to the regulation is that fleets are being provided a longer time to turn over fleets with cleaner engines. There would be a change from the diesel PM fleet average emission rate with scheduled compliance dates in 2017 and 2020 to a phase-out schedule based on tier, and a fleet average option for larger fleets with compliance dates in 2020, 2023, and 2027. The change in compliance schedules can be seen by comparing Table J-1 (current schedules) to Table J-2 and Table J-3 above.

This change means that higher emitting engines can remain in use longer than originally allowed under the existing regulation. Staff proposes this change because it was determined the existing fleet standards are financially and, in some cases, technologically infeasible, primarily due to the lack of verified retrofits and a delayed availability and high cost of Tier 4 engines, so the original compliance dates were cost prohibitive to meet. This means that fleets will not be forced to turn over to cleaner engines as quickly as originally required. The addition of the tier-phase out compliance option, which is required for smaller fleets and optional for larger fleets, improves compliance with the standards by precluding continued registration of engines with higher emissions based on tier, by expiring out their registrations per the phase out dates.

#### b. Low-use and Emergency-use

There are proposed changes related to “Low-Use” and “Emergency-Use” engines. First, there are minor administrative changes to the definitions and terms throughout to clarify what engines qualify as low-use or emergency-use only. Under the current definition for low-use, engines can be operated for up to 80 hours per year. The proposal increases the low-use limitation to 200 hours per year, which is consistent with the Off-Road Regulation due to many off-road portable engines being subject to both regulations. The existing exemption in the ATCM for the low-use and emergency use engines is clarified so these engines are not subject to the requirements of section 93116.3, and some restrictions are placed on designating Tier 1 and Tier 2 engines as low-use or emergency-use. Overall, these changes ensure the low-use and emergency-use engines are properly designated and emissions are kept low. Low-use engines that subsequently exceed the allowed hours of operation in a calendar year or emergency use engines that subsequently are used in non-emergency applications, become immediately subject to the limitations of section 93116.3(c)(1), or (c)(2) in the year such exceedance occurs.

#### c. Credits and Incentives

The proposed amendments provide advantageous credits for engines that would have met the exiting 2017 fleet average emission standards. The credits would apply to all fleets that demonstrate compliance with fleet averages on the schedules in Table J-1 above.

The proposed amendments provide an incentive to remove high-emitting older engines earlier than is required under the proposed schedule in Table J-2. This incentive will apply to all small fleets and those large fleets that opt-in to follow the tier phase out schedule.

The proposed amendments expand upon the existing electrification incentive to include an incentive for a complete replacement of a currently permitted/registered diesel engine with electric grid power. An additional incentive is added for situations where fleets need to expand their fleet power by choosing to install equipment that uses electric grid power instead of adding diesel engines to their fleet. This incentive would be available to those large fleets that choose to opt-in to the fleet average option and is designed to encourage development and use of zero emission technologies in the portable sector.

#### d. New Provision for Onshore Projects Where Combined Horsepower Exceeds 2,500 bhp (Large Project Provision)

The proposed amendments add a large project provision which would allow extreme ozone non-attainment districts to require notification on large projects (defined by project HP and engines' emission factors). (See proposed amendments to California Code of Regulations, title 13, section 2455.) The person responsible for the notification would only need to include the final CEQA document with the notification to the local air district for review. The districts could then perform an ambient air quality impact analysis (AQIA). If the AQIA shows that the large project causes an exceedance of an

Ambient Air Quality Standard, it would invalidate PERP registrations and the district could then require mitigation. This provision will ensure that multiple engines operating in one location don't cause exceedances and help protect air quality.

e. Other changes

There are some changes to remove requirements that are obsolete (e.g. date passed), which are administrative in nature.

A proposed change to remove eligibility for flexibility engines certified to older tier levels will improve implementation of the regulation and help ensure emission reductions are achieved by not allowing these higher emitting engines to be newly permitted when their certified counter parts are not eligible for use.

A proposal was added to exempt engines retrofitted with level 3 VDECS devices from the tier phase out schedule because the emissions from these engines will have been reduced by 85 percent with the installation of a VDEC device and, as such, those engines' emissions have been essentially rendered as equivalent to emissions from Tier 4 interim engines, which do not have phase out dates. Additionally, engines retrofitted with VDECS devices may also be used in the fleet averaging option where their low emissions will have a positive effect on the fleets average emission rate.

A proposed change to prohibit sale of illegal, or non-compliant, engines would improve implementation of the regulation by improving enforcement.

The proposed addition of disclosure requirements for sellers of engines, regarding ATCM requirements, would improve implementation of the regulation.

iv. Changes to record keeping requirements.

The proposed changes to the fleet recordkeeping requirements are administrative and would improve implementation and enforcement of the standards.

**B. PERP**

Staff is proposing revisions to the PERP regulation to align the definitions and applicability with the Portable Engine ATCM. Other changes are proposed to improve implementation of the registration program. None of these revisions affect the stringency of the program or affect changes that implicate any modifications to the physical environment since they are primarily administrative revisions to align with the Portable Engine ATCM and improve implementation and enforcement of the registration program.

**D. Analysis**

Based on the description of the changes in foreseeable methods of compliance described above for the Portable Engine ATCM, along with the information in the Staff Report: Initial Statement of Reasons (ISOR) for the amendments, which is incorporated in its entirety by reference within this environmental analysis, it can be seen that many of the revisions are administrative in nature and do not lead to foreseeable changes in compliance that could affect the physical environment. These changes include clarifications and revisions to applicability, definitions, and record keeping requirements,

with the exception of changes to the low-use and emergency-use provisions. Similarly the proposed amendments to the PERP regulation do not lead to new or different foreseeable compliance actions that could cause any changes to the physical environment, other than improved implementation or enforcement of the program, which would lead to air quality benefits. These changes, therefore, are not analyzed any further.

The primary change is the proposed modification to the fleet requirements under the requirements section of the Portable Engine ATCM. This change would push out future dates for removal of older engines, which means these existing engines, with higher diesel PM and NOx emissions compared to newer (Tier 4) engines, will remain in operation longer than originally allowed and analyzed under the existing regulation. The addition of a tiered phase-out schedule to this requirement, however, ensures greater compliance and the emission reductions intended by the regulation are more likely to be achieved. As explained above and in the Staff Report, the emissions reductions contemplated for the existing regulation cannot be achieved due to economic and technical feasibility issues with the existing regulation.

The addition of credits and incentives could lead to the introduction of cleaner technology earlier than would otherwise be required under the regulation. The annual limit change for low-use engines could potentially lead to an increase in newly designated low-use engines. The large project provision will ensure multiple engines operating in one location don't cause exceedances of federal air quality standards. The analysis below considers the potential for new significant environmental effects or substantial increase in severity of impacts based on CEQA Guidelines Environmental Checklist arising from these changes.

1. Aesthetics, agriculture resources, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, or utility and service systems.

The change in compliance dates, the addition of tier phase-out provisions, the credits and incentives for cleaner technology, and the changes to low-use and emergency-use engines, and the large project provision do not lead to any changes in the reasonably foreseeable methods of compliance in any way that could affect any of these resource areas. These provisions cause no construction or other type of physical landscape level actions that could relate to any physical change, either directly or indirectly, to any of these resources. The amendments affect only how long certain types of engines may remain in operation and emit NOx and diesel PM, which is related to air quality, discussed in more detail below. Greenhouse gas emissions would also not be affected by these amendments because both U.S. EPA and ARB have treated GHG emissions among Tier 1, 2, 3 and 4 engines as the same. This is based on modeling that shows there is no change in GHGs between the scenarios because the changes between different tier levels of engines do not significantly impact efficiency or fuel usage. Overall, GHGs are impacted only when there is electrification, change in usage, or efficiencies are somehow rewarded by the regulatory structure.

## 2. Air Quality

The CEQA baseline for determining the existence of any new or more significant adverse air quality or greenhouse gas impact is normally the existing environmental conditions at the time the analysis is conducted (14 CCR 15125). For this project, staff determined the CEQA baseline is the current levels of emissions from portable emissions covered by the Portable Engine ATCM. For disclosure purposes, staff also conducted an analysis that looked at the rate of anticipated emission reductions (in tons per day) for the current regulation, based on what was originally projected when the current regulation was adopted (referred to as the “existing ATCM with 100 percent compliance” scenario). Staff further analyzed the rate of anticipated emission reductions for the current regulation based on reasonably foreseeable expected levels of noncompliance due to the feasibility issues (referred to as the “existing ATCM with reasonably foreseeable compliance levels” scenario). Staff then compared these scenarios to the rate of emission reductions now projected from the proposed amendments. The “existing ATCM with 100 percent compliance” scenario is not used as the environmental baseline for purposes of this CEQA analysis because it represents a future projected environmental condition that is no longer accurate or reasonably foreseeable because of the real world changes that have occurred (change in availability and cost effectiveness of tier 4 engines) discussed in this Environmental Analysis and in the Staff Report.<sup>4</sup> Similarly, the “existing ATCM with reasonably foreseeable compliance levels” scenario is not intended to serve as the CEQA baseline for this project. These comparisons are merely presented here in the interest of public disclosure. While staff has made every effort to anticipate and disclose the emissions levels under each scenario, it is not possible to forecast with precision the levels of noncompliance that may occur in future years. Because it is not possible to achieve 100% compliance with the existing regulation, and because forecasting anticipated noncompliance cannot be done with precision, staff has determined that the current-year levels of emissions from portable emissions covered by the Portable Engine ATCM is a more accurate and informative baseline for purposes of this CEQA analysis.

Following the discussion of the change in compliance dates, the section below discusses the air quality impacts resulting from the addition of tier phase-out provisions, the credits and incentives for cleaner technology, the changes to low-use and emergency-use engines, and the large project provision.

### i. Change in Compliance Dates

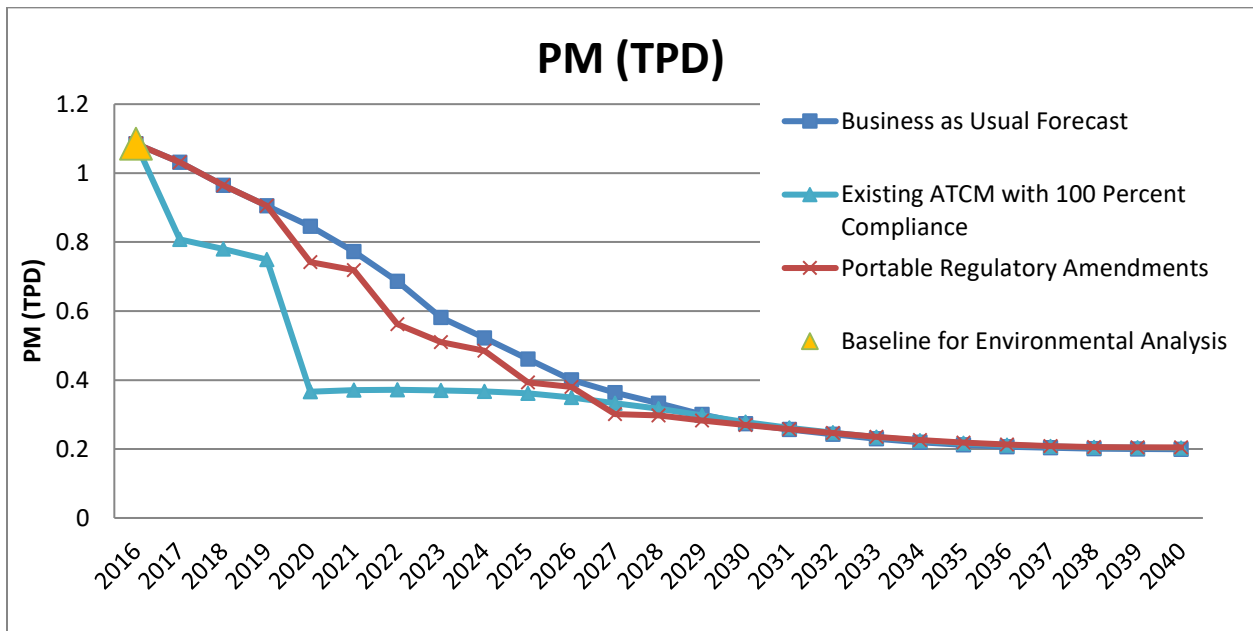
Figures J-1 and J-2 show the projected rate of emission reductions of NO<sub>x</sub> and PM from portable engines from 2016 through 2040 for the existing ATCM under three scenarios: (a) existing ATCM with 100 percent compliance, (b) the Business as Usual Forecast (or the existing ATCM with reasonably foreseeable compliance levels), and (c) the Portable Regulatory Amendments. If 100% compliance were attainable under the existing ATCM (which ARB has determined it is not), the fleet would turn over more quickly and emissions from this source would decline faster than under the Portable Regulatory

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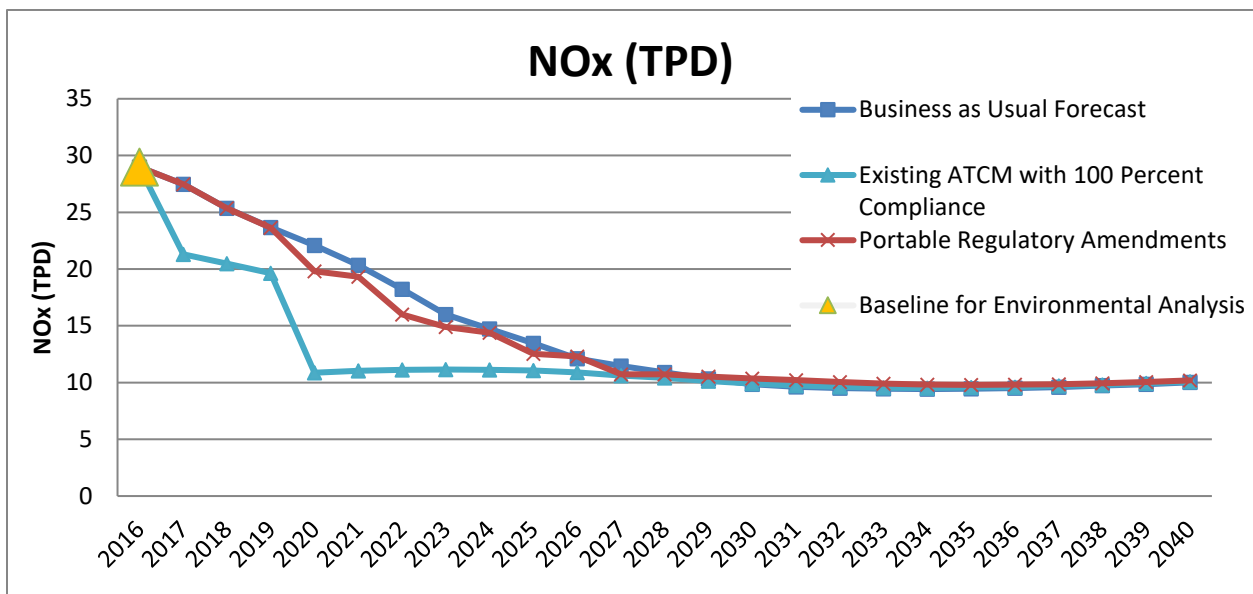
<sup>4</sup> The current regulation with reasonably foreseeable compliance rates represents the ‘no project’ scenario, which is not the same as the baseline for determining impacts under CEQA unless it is identical to the existing environmental setting. (14 CCR 15126.6(e)(1).)

Amendments scenario. In 2027, the rates of emission reductions under the Portable Regulatory Amendments catch up to rate of reductions anticipated under the “existing ATCM with 100 percent compliance” scenario, shown by the light blue and red lines converging. The available information shows that the Portable Regulatory Amendments are reasonably expected to deliver greater reductions across the years than the “Business as Usual Forecast” scenario, which is a projection of current conditions and the reasonably foreseeable future compliance of the regulated community.

**Figure J-1: Statewide PM (tpd) by Year**



**Figure J-2: Statewide NOx (tpd) by Year**



Applying the current emissions levels in 2016 as the baseline, emissions from portable equipment under the proposed amendments continue to decline from today's levels and continue to result in air quality benefits. Although the emissions do not decline as quickly as what was expected to occur under the "existing ATCM with 100 percent compliance" scenario, the rate of emission reductions under the Portable Regulatory Amendments are expected to eventually catch up to what was initially expected to be achieved under the existing standard (red and light blue lines converge). Therefore, the Portable Regulatory Amendments would eventually achieve the overall reductions originally anticipated.

In comparison to the "existing ATCM with 100 percent compliance" initial projection, staff determined the Portable Regulatory Amendments would result in a delay in the rate of achieving emission reductions of diesel PM and NO<sub>x</sub> from portable equipment over a period of 7 years. In 2020, ARB estimates fewer emission reductions by 0.38 tpd of PM and 9.0 tpd of NO<sub>x</sub> under the Portable Regulatory Amendments compared to what was originally projected for 2020 under the "existing ATCM with 100 percent compliance" scenario. Comparing the same two scenarios in the key year of 2023 for attaining the National Ambient Air Quality Standard (NAAQS) for ozone in the South Coast air basin, ARB estimates fewer emission reductions than initially projected by 0.14 tpd of PM and 3.7 tpd of NO<sub>x</sub>, which is a contributor to ozone formation. By 2027 the Portable Regulatory Amendments would achieve the same tons per day of emissions reductions as initially projected under the "existing ATCM with 100 percent compliance" scenario.

The regulation as amended by the Portable Regulatory Amendments will still contribute to achieving the ozone NAAQS as initially projected in the 2004 ATCM regulation. Although the ATCM benefits have not been included in any SIPs to date, and the initially projected levels of emission reductions were not and are not expected to be achieved for the reasons described in the ISOR at pages 2-4 and 13-15, the magnitude of the potential changes in anticipated emission reductions are relatively small within the context of the overall inventory. Given this, staff finds the change in projected emission benefits will not significantly impact overall state air quality goals.

Importantly, the Portable Regulatory Amendments would generally cause existing emissions levels to decrease more rapidly than by simply leaving the current regulation in place (shown as the "Business as Usual Forecast" scenario).

Staff also estimated the potential health risk associated with the delay in emissions reductions under the Portable Regulatory Amendments by estimating the cancer risk from the diesel PM emissions of portable equipment. Table J-4 outlines the cancer risks associated with estimated PM emissions from portable equipment in the South Coast Air Basin under the current regulation, based on the rate of emissions initially projected when the regulation was adopted, the projected emissions under the

Business as Usual Forecast over time and the projected emissions from the Portable Regulatory Amendments over time. The South Coast Air Basin has the greatest number of diesel PM sources and is therefore used to represent an upper bound for the potential cancer risk state-wide.

**Table J-4. Projected South Coast Air Basin-Wide Cancer Risk from Portable Equipment Diesel PM (Chances per Million)**

Year	Existing ATCM with 100 Percent Compliance*	Business as Usual Forecast	Portable Regulatory Amendments
2012	48	48	48
2017	28	35	35
2020	13	29	25
2021	13	26	24
2023	13	21	18
2027	11	13	11
2030	10	10	9
2031	9	9	9
*Staff has determined that the current standards are not implementable and therefore this scenario is not the appropriate baseline for cancer risk level comparison or forecasting.			

As with the rates of emissions reductions, the rates of exposure and cancer risk under the Business as Usual and Portable Regulatory Amendments scenarios will converge in 2027. Because the existing ATCM is not achievable, full compliance with the existing ATCM is not reasonably foreseeable, and it would be speculative to compare risks under the proposed amendments to the existing requirements.

To assess the rate of exposure and associated cancer risk from 2017 through 2027 under the projections for the Portable Regulatory Amendments, a comparison was made with a recent study that found the population-weighted basin-wide cancer risk in Southern California to be 897 cases per million people<sup>5</sup>. The rate of exposure and elevated risk from 2017 to 2027 from the amendments ranges from 0-12 chances per million, which represents approximately 1% or less of the total basin-wide cancer risk in 2012. Therefore, although emissions (and thereby cancer risk) are not declining as rapidly under the Portable Regulatory Amendments as under the original projections for the current regulation, the difference in exposure and risk is not significant in the overall context of exposure. It is also important to note that under this comparison, there is not an actual increase in emissions and cancer risk compared to the Business as Usual Forecast (or existing ATCM with reasonably foreseeable compliance levels), only a slower rate of decrease. Under the Business as Usual Forecast the 2017 cancer risk level is 35, which is the same level as the Portable Regulatory Amendments. In 2020 that level decreases and the cancer risk level for the Proposed Regulatory Amendments

<sup>5</sup> South Coast AQMD 2015. Page ES-3. [http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7](http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7;);



is less than the level for the Business as Usual Forecast. Therefore compared to the existing conditions the cancer risk level will decrease with the Proposed Regulatory Amendments.

In summary, as explained above, ARB determined that full implementation of the current regulation is not the appropriate baseline for this CEQA analysis because the rate of reductions under the current ATCM standards no longer reflects actual foreseeable conditions that would occur since staff has determined that the current standards are not implementable. Based on the current conditions baseline, which takes into account the Business as Usual Forecast scenario, or currently-implemented aspects of the existing regulation, staff determined there are no new or more severe significant adverse impacts to air quality resulting from the delay in compliance schedules in the proposed Portable Regulatory Amendments.

Also, even if the future projected rate of emissions from the current standards was implementable, the comparison of the proposed amendments to the current regulation shows only a short term delay in emissions reductions, relatively small delay in reducing cancer risk, and a short-term delay in the accrual of overall projected air quality benefits. This does not reflect any actual degradation to air quality or health in the near or long-term. CEQA is concerned about disclosing and mitigating environmental degradation (PRC 21000) and not changes in hypothetical environmental benefits. Under all of the scenarios above, there is no degradation of air quality through increased emission or increased health risk resulting from the delayed compliance schedules, only a short-term change in the rate of projected air quality and health benefits.

ii. Tier phase-out schedules, credits, and incentives.

The addition of the tier-phase out schedules ensures greater compliance and enforceability of the standards. This ensures the projected emission reductions intended by the regulation are achieved. The amendments adding credits and incentives are intended to incentivize the introduction of cleaner technology earlier than would otherwise be required under the regulation. These provisions have the potential to lead to a greater rate of decrease in overall emission from portable engines leading to an overall air quality benefit.

iii. Low –use and Emergency use

The proposed increase of low-use engine hours from 80 to 200 hours per year is not expected to result in a significant increase in emissions, given that there are about 225 engines operating under low-use registrations in PERP out of over 30,000 total engine registrations. It is expected that any emissions increase from this increase would be negligible, thus resulting in no impact to air quality.

#### iv. Large Project Provision

This provision provides those districts with extreme non-attainment for ozone status the ability to review the emissions impacts from projects where the combined registered horsepower exceeds 2,500 bhp. This provision will ensure multiple engines operating in one location don't cause exceedances of federal air quality standards and as such, protects air quality.

### 3. Hazards and Hazardous Materials

Staff investigated stakeholder claims that Tier 4 engines present a potential ignition risk if combustible gases are emitted from a well during drilling. Staff concluded that the regulated community's concerns that Tier 4 engines may not work in operations with low-load, long-idle loading cycles and that Tier 4 engines could lead to auto-ignition of combustible gases occasionally released from drilling sites can be avoided altogether when proper work practices are implemented.

Tier 4 engines without DPFs do not pose additional safety risks with regards to auto-ignition of hydrogen sulfide or methane when compared to a Tier 3. Tier 4 engines with DPFs which utilize active regenerations may potentially add risk for auto-ignition of methane compared to a Tier 3 if operated improperly. However, methane is lighter than air meaning it rises as it disperses. Staff learned about the following measures that can be taken to reduce the risk of auto-ignition from a stakeholder site visit, as described in Appendix K: positioning the engine upwind of the drilling site; positioning the engine farther from the drilling site; and the installation of fans to blow air and potentially combustible gases away from the engine. Tier 4 engines without DPFs have an exhaust temperature lower than the auto-ignition temperature of methane, so the risk for auto-ignition is the same as for Tier 3 engines.

Where fleets want to take additional precautionary measures, fleets may choose to use Tier 3 engines approved for use at hazardous locations. Staff has proposed certain amendments which will allow these engines to be used indefinitely in these potentially hazardous situations.

Based on this analysis, staff has determined that the Proposed Amendments would result in no new significant impact to hazards or hazardous materials. Please see Appendix K for additional discussion and background.

## **E. Conclusion**

In sum, there are potential air quality benefits resulting from the proposed amendments through the improved implementation, enforceability, and credits and incentives. While it may appear there would be some delay in criteria pollutant emission reductions in the coming years compared to what ARB initially projected when the standards were first adopted, those projected emission reductions have proven to be unachievable, as discussed above. Nonetheless, there is no new significant adverse impact to air quality

due to the amended standards, since reductions will continue to be achieved, with air quality continuing to improve. The proposed amendments are needed to ensure successful, cost-effective and technologically feasible implementation of the program to achieve emission reductions from what would have occurred without this regulatory program.

## References

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5. Aguila, Memo to the File. Discussion with Stakeholders on Measures to Minimize Auto-ignition Near Drilling Sites from Portable Engines. August 2017