

# Potential Changes to the PERP Regulation and Portable Engine ATCM



**September 13, 2016  
Fresno**

**California Environmental Protection Agency**  
**Air Resources Board**



## Questions/Comments During Workshop

- We want as much feedback today as possible
- Please hold all questions until after presentation
- For those viewing remotely, you may submit questions via email at [portable@arb.ca.gov](mailto:portable@arb.ca.gov)

## Background

- PERP Regulation effective September 17, 1997
- Voluntary program for registration
  - Allows for Statewide operation of engines & eq. units
  - Districts retain permit authority
  - ARB sets requirements, Local Districts enforce
- Approximately 39,000 units
  - 30,500 engines
  - 4,500 equipment units
  - 4,000 TSE



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## Background (con't)

- Portable ATCM effective March 11, 2005
- Part of the Diesel Risk Reduction Plan
  - New engine standards (Tier 4, etc.)
  - Cleaner diesel fuel (15 ppm)
  - Replacement of older engines
- PM Reduction Strategies
  - Tier 0 phase out
  - Permit eligibility
  - Fleet Average



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## Current ATCM Requirements

- Tier 0 engines gone since 2011
  - Except emergency & low use (2017)
- Limited eligibility for PERP and local permits
- Fleet Average Standards (PM) currently in effect

Fleet Standard Compliance Date	Engines <175 hp (g/bhp-hr)	Engines 175 to 750 hp (g/bhp-hr)	Engines >750 hp (g/bhp-hr)
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

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## Opening the Portable ATCM

- Compliance with future fleet requirements projected to be very difficult
  - ATCM adopted 12 years ago (before T4 was created)
  - Delay in availability and high cost of Tier 4 engines
  - Abundance of flex engines (>15% of PERP inventory)
  - Retrofits not getting to portable sector (only 7 engines total)
- Necessary to revise fleet requirements due to the lack of needed technology

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## Amendment Process So Far

- ARB staff crafted initial regulatory concepts
- Public workshops held in March & June 2016
- Meetings with CAPCOA and stakeholder workgroup to further develop concepts



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## Draft ATCM Changes Emission Reduction Strategies

Tier phase out for all fleets:

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	1/1/2023	1/1/2025	1/1/2027
Tier 3 built prior to 1/1/2009	1/1/2026	1/1/2028	NA
Tier 3 built on or after 1/1/2009	1/1/2028	1/1/2030	NA
Tier 1, 2, and 3 flexibility engines	December 31 of the year 18 years after the date of manufacture		

- Fleet defined as all engines operated in California owned by a single entity
  - Small fleets are 750 total bhp or less, large fleets are >750 total bhp
  - Each military installation will be it's own fleet
  - Pre-2007 on-highway engines will be treated as Tier 3 for phase out

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## Draft ATCM Changes

- Large fleets have fleet average option:

Compliance Date	Fleet PM Standard (g/bhp-hr)
1/1/20	0.10
1/1/23	0.06
1/1/27	0.03

- Criteria for large fleets to use fleet average
  - All engines in fleet subject to ATCM must be registered in PERP
  - Must submit a request by 2019 to use option
  - If fleet has unpermitted engines after 2019, out of fleet average
- Retrofitted engines exempt from phase-out requirements
  - Must have verified Level 3 diesel particulate filter
  - Still included in Fleet Average option for large fleets

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## PERP INVENTORY UPDATE

SEPTEMBER 8, 2016



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## EMISSIONS INVENTORY

- Inventory
  - Emissions from the equipment
  - Based on population of equipment, how much it is used, how hard it is run, how old it is
  - Future emissions based on how much the industry will grow, how long older, dirtier equipment is used
- Current Inventory
  - Not presenting a final inventory, still soliciting input on methodology and/or data
  - Updates: Registration data, survey, methodology

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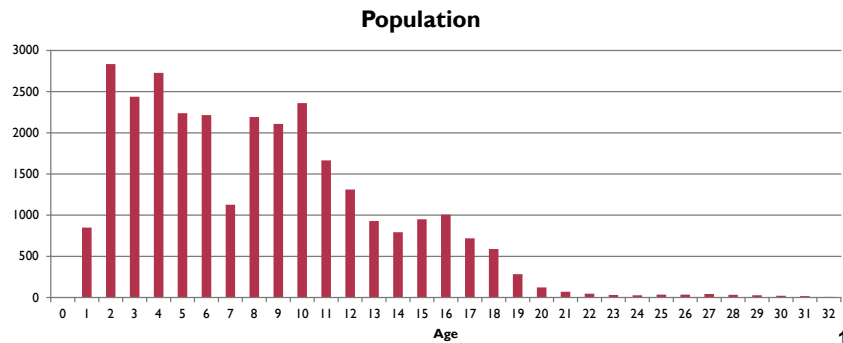
## SUMMARY

- Updated inventory needed to determine impacts of possible changes
- All inventory inputs updated
- New model developed
- New assumptions on natural turnover and rule behavior

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## INVENTORY INPUTS: POPULATION

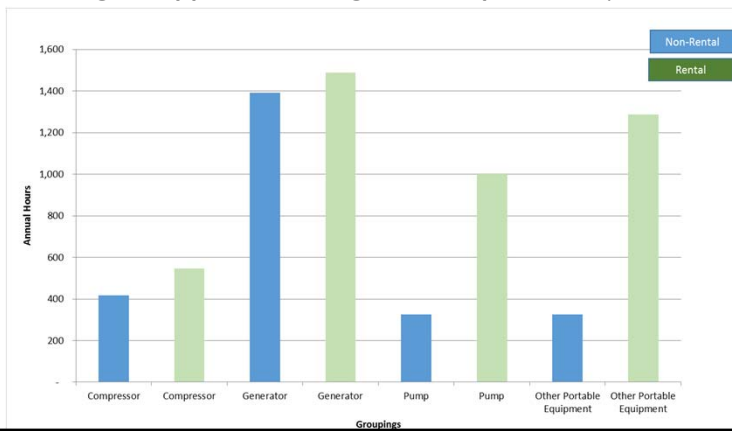
- Approximately 30,000 units in PERP registration currently
- Rule support requires only PERP registered units, but inventory should later include non-PERP units and gasoline



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## INVENTORY INPUTS: ACTIVITY

- ~3,500 reports
- Average is approx. 42% higher than previous (600 hours)



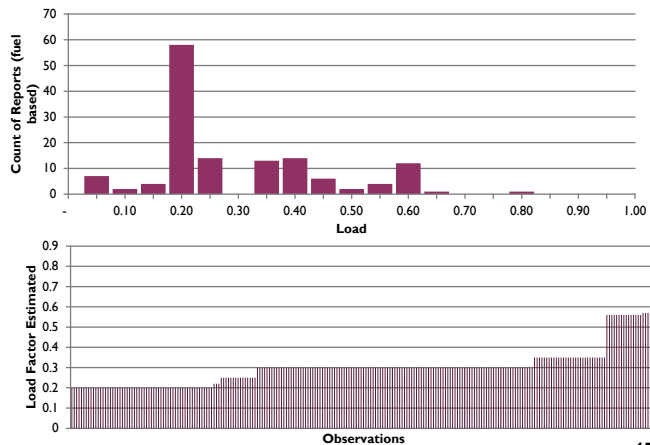
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## INVENTORY INPUTS: LOAD

- Data provided for approx. 250 engines
- Fleet estimates and ARB analysis converge

Load Calc: 0.31  
Reported: 0.31

Previously: 0.71



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## INVENTORY INPUTS: EMISSION FACTORS

- Emissions factors based on MSAB general off-road emission factor update (circa 2007)
  - Based on mix of certification data and in-use testing
- ARB reviewing newer emissions factor data, may propose updates based on more recent information when analysis is complete


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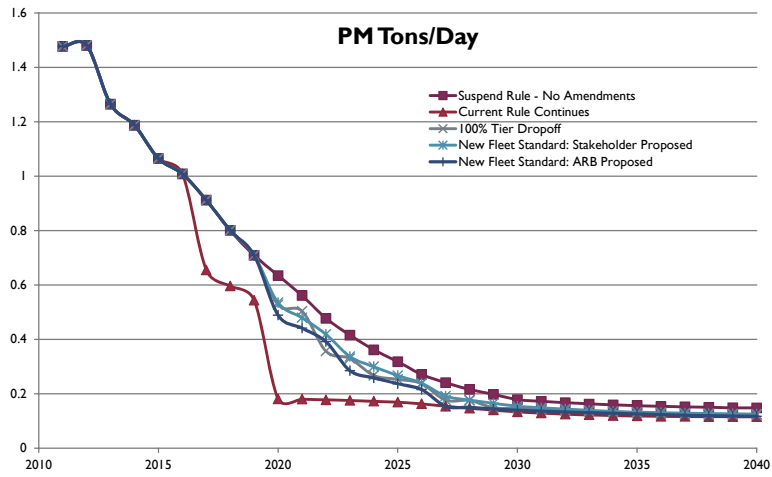
## MODELING: FLEETS

- Fleet model maintains fleet and vehicle specificity in the model – no aggregation
- Can track a fleet/company or a single vehicle from beginning to end of model
  - ARB may be the only agency with information and modeling knowledge to achieve this
- Modeling focused on maintaining the average age of a fleet
  - When a fleet exceeds its baseline average age, oldest relative vehicle in the fleet is turned over, iterated until fleet average age is reached
  - 13 years of population data confirm proper fleet average ages

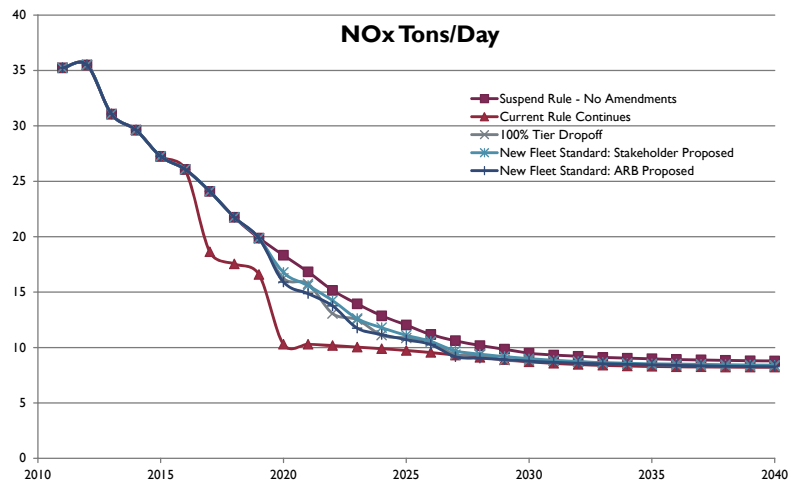


- Portable equipment inventory housed in  **FFROAD Alpha**
- Comprehensive off-road diesel emissions inventory tool
  - Portable Equipment, Construction, Cargo Handling, Ocean Going Vessels, Transport Refrigeration Units, Locomotives, Agricultural Engines, etc.

## RESULTS: STATEWIDE PM



## RESULTS: STATEWIDE NOX



## QA 7 STEP PROCESS

- Modeling QA
  - Anomaly Analysis
  - Replication
  - Emergent Behavior (AutoLine)
  - Peer Review
- Model QA
  - Line Item QA
  - Sum Total QA
  - Top down QA

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## Draft ATCM Changes

- Low-use and emergency-use engines exempt from fleet requirements
  - Low-use engines increased to 200 hr/yr
  - Must designate Tier 1 & 2 engines 6 months prior to phase-out
  - Can't convert Tier 1 & 2 to regular use unless exceed limitation
- Benefit for fleets in compliance with 2017 fleet standards
  - Separated by size category (<175, 175 - 750, >750)
  - Two extra years for phase-out OR
  - Double count T4 in fleet average for first two dates
- Benefit for removing Tier 1 and Tier 2 engines early
  - Must be removed from service in California
  - Remove all Tier 1 by 1/1/2019 and Tier 2 ( $\leq 750$  bhp) by 1/1/2020
  - Extra 2 years for Tier 3 (including flex) on phase-out schedule only

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## Draft ATCM Changes

### ➤ Prohibition of Sale

- Districts may take action against sellers of non-compliant engines
- The sale of engines for resale out of California not prohibited
- Tier 0 engine sales always prohibited
- Tier 1, 2 and 3 engine sales prohibited after phase-out dates
- Tier 4 interim and final engine sales never prohibited

### ➤ Disclosure of Applicability

- All legal engine sales must have a written disclosure to buyer
- Consistent with other existing diesel regulations
- May allow for combined disclosure for multiple regulations

“When operated in California, any portable diesel engine may be subject to the California Air Resources Board Airborne Toxic Control Measure For Diesel Particulate Matter From Portable Engines Rated At 50 Horsepower And Greater. It therefore could be subject to retrofit or accelerated turnover requirements to reduce emissions of air pollutants. For more information, please visit the California Air Resources Board website at <http://www.arb.ca.gov/portable/portable.htm>”

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## Draft ATCM Changes

### ➤ Eligibility for permit/registration for flexibility engines

- Only recent tiers eligible → no Tier 2 ≤750 bhp or any Tier 1

### ➤ Districts may permit lower tiers

- Currently, may not permit after January 1, 2017
- Must show California residency for Tier 1, 2, and 3

### ➤ Agricultural use definition and exemption

- Consistent with Stationary Engine ATCM
- Forest operations and first processing subject to Portable ATCM

### ➤ Two-engine vehicle definition and exemption

- Subject to Off-Road Vehicle Regulation

### ➤ Restriction for PM<sub>2.5</sub> non-attainment districts

- Older tiers in fleet average may not operate in those districts after phase-out dates

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## Draft ATCM Changes

- Other exemptions for certain equipment
  - Portable engines on commercial harborcraft
  - Engines operated exclusively during emergency event
- Updated recordkeeping and reporting requirements
  - Updated ATCM compliance statement required for large fleets in fleet average when adding lower tiers or removing Tier 4
  - Annual report for low-use engines
  - Must keep records for each emergency (nature and date)
- Add definition for replacement engines
  - Included in the ATCM fleet requirements
- Remove obsolete language
  - Tier 0 extension
  - SCR provisions

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## Draft PERP Changes

- Eligibility for initial registration
  - Agricultural use not eligible, except owned by a rental business
  - Resident engines permitted by local air district if fleet is using FA
  - Auxiliary engine on 2-engine vehicles subject to off-road
- Application processing
  - Currently must Issue or deny registrations 90 days from receipt date
  - Change issuance to 90 days from date application deemed complete and keep denial at 90 days from receipt
- Allowable use of registered generators
  - Electrical upgrade operations expanded to 180 days
  - Mechanical breakdown of stationary backup generator
  - District must give approval
    - District notified within 72 hours
    - Replacement engine must have same or cleaner emissions
    - Replacement engine must comply with existing stationary permit
    - Mechanical breakdown not to exceed 180 days

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## Draft PERP Changes

- Temporary Registration
  - Only for cleanest engines - Tier 4 final
  - Certificate expires in 3 months
- Project review by non-attainment districts
  - Considering giving districts the ability to review impact from large projects in order to enforce existing AAQS requirement
- Revise PEPS definition
  - Specific categories will be listed
- Multiple Engine Inspection Discount
  - Districts may send bill for inspection fee difference
  - Fleets that misuse discount will be prevented from future use
- Rental Requirements
  - Rental agreement must be readily available, not onsite
  - Remove the notification requirement for >9 month rentals

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## Draft PERP Changes

- Program Fee Increase
  - Fees must cover cost of program implementation
  - Annual adjustment based on consumer price index (CPI) currently allowed by Regulation
  - Fees last adjusted in 2004 (ARB) and 2006 (districts)
  - Inspection fees may increase by a minimum of 15%
  - ARB fees could increase by as much as 40%
- Fee Collection
  - Currently fees are sent with application forms (except renewal)
  - Delays registration issuance due to incomplete applications
  - Currently examining a change to how program fees are submitted
- Reporting
  - Submit hour meter readings on all engines at renewal

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## Draft PERP Changes

- Identical Replacement
  - Limited to engines compliant with phase-out schedule
  - Only affects non-registered engines
- Change of ownership restriction
  - No lower tiers within 6 months prior to small fleet phase out
  - Prevent movement of older engines between fleets
- Low-use designation for Tier 3 engines
  - Must be submitted in January
  - Aligns with annual report for hours
- Remove obsolete Tier 0 engine language
  - Tier 0 extension for spark-ignition engines
  - Emission limits

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## Other Issues

- District reporting
  - Districts must submit annual report summarizing enforcement activities
  - Proposing minor change to specify registration number for each inspection performed
- Tier 4 engine feasibility
  - Concern that engines with DPFs do not work well in some applications
  - Multidivisional team at ARB investigating technical issues
  - May provide flexibility in ATCM if issues are not resolved
- Tier phase-out enforcement
  - Districts need to be able to readily identify tiers in the field
  - Considering methods for field identification and enforcement

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## Next Steps

- Update draft regulatory language
- Public workshop on 11/10/16 to be held in Sacramento
- Staff Report including proposed regulations available early 2017
- Board hearing March 2017

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For more information:

[www.arb.ca.gov/portable/portable.htm](http://www.arb.ca.gov/portable/portable.htm)

Sign up for the portable listserv:

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Send questions or comments via email:

[portable@arb.ca.gov](mailto:portable@arb.ca.gov)

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