

Potential Changes to the PERP Regulation and Portable Engine ATCM



**November 10, 2016
Sacramento**

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

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



3

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



4

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

5

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

6

Amendment Process So Far

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



7

Proposed ATCM Changes

Emission Reduction Strategies

Tier phase out for all fleets (old proposal):

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, except military installations
 - Small fleets are 750 total bhp or less, large fleets are >750 total bhp
- Pre-2007 on-highway engines will be treated as Tier 3 for phase out

8

San Joaquin Valley Air Quality Issues

- Valley has the most challenging PM_{2.5} air quality in the Nation
- Comprehensive approach of NO_x and PM_{2.5} reductions needed to meet PM_{2.5} standard
- Board heard from advocates that Valley PM_{2.5} SIP needed to be strengthened
- Board directed staff to investigate ways to achieve more emission reductions
- New approach in Portable Engine ATCM allows opportunity for further NO_x and PM_{2.5} reductions.

9

Proposed ATCM Changes

Emission Reduction Strategies

Tier phase out for all fleets (new proposal):

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 (>750 bhp)	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		

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

10

Proposed 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

11

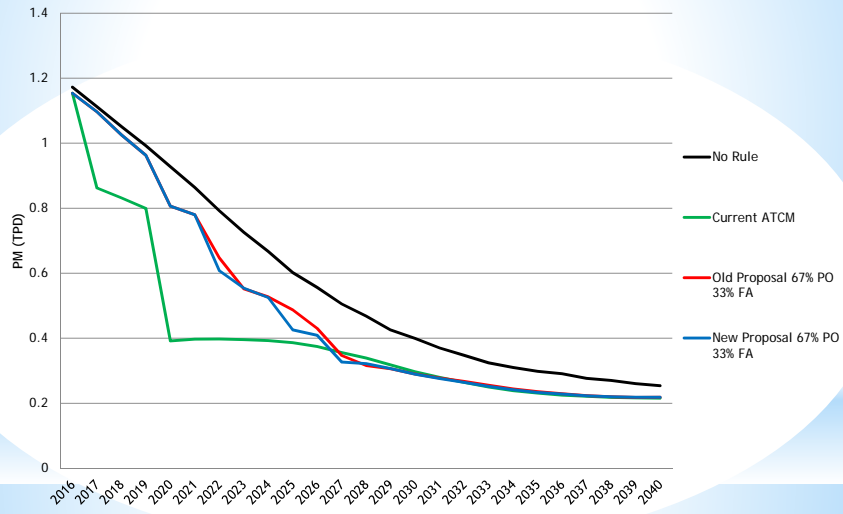
Inventory Methods

- Used PERP data from 2011-2016
- Assumed fleets will keep a constant average age
- Received about 3,500 surveys
 - Average 850 hours operated annually
 - Varies among industries (especially rental vs. non-rental)
 - Average load factor of 31% across multiple engine uses and industries.
- Model simulates fleet turnover based on compliance with standards and constant average age.

12

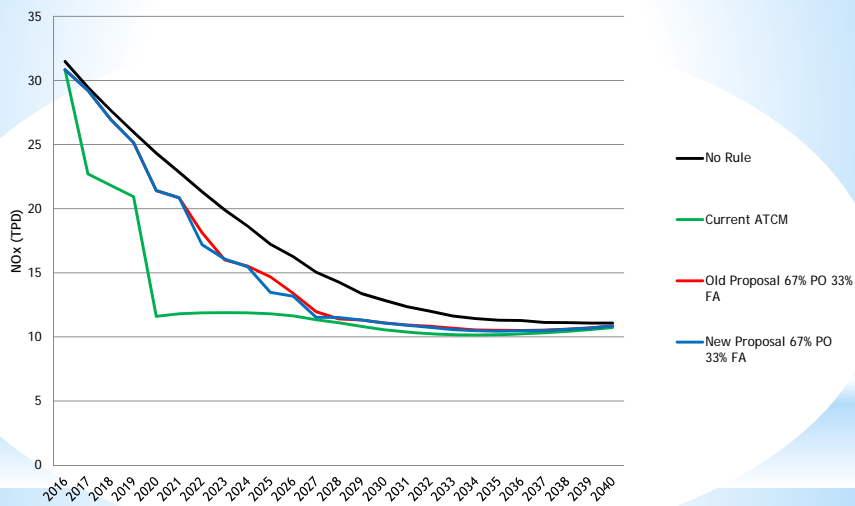
Emissions Inventory Statewide

PM (TPD)



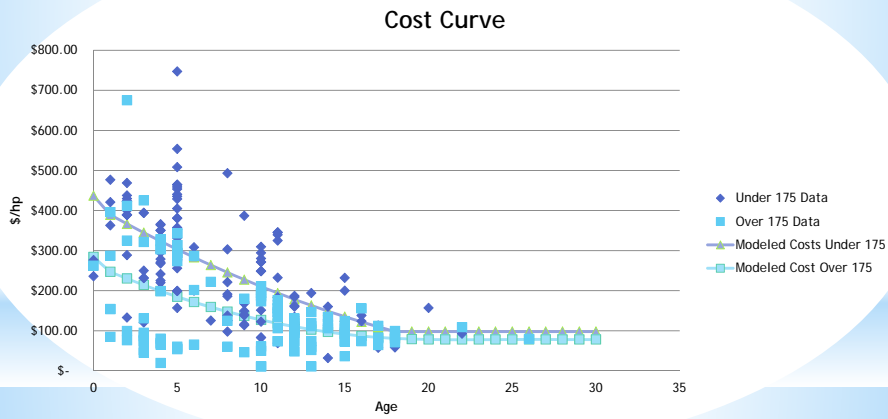
Emissions Inventory Statewide

NOx (TPD)

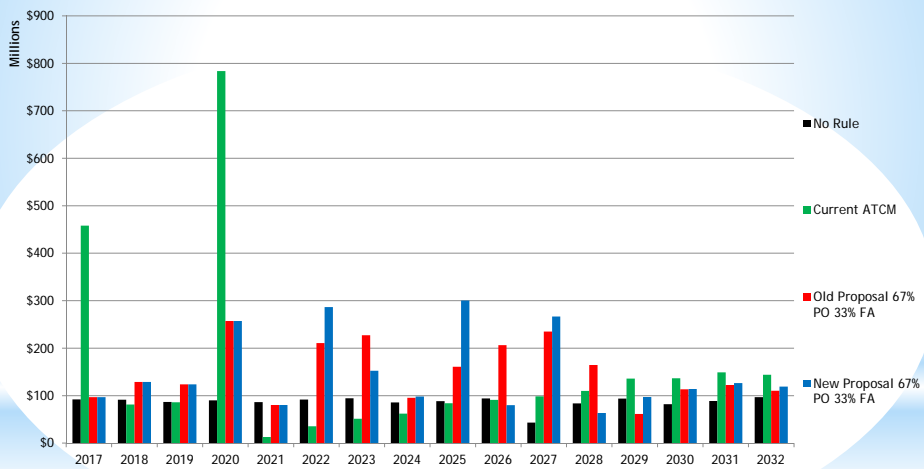


Cost Curves

Staff collected cost data for about 250 pieces of used equipment and cost data from engine manufacturers on Tier 4 final.



Estimated Annual Cost



Cost of PM Reductions (Old Proposal – New Proposal)

Year	Reductions from Old Proposal Relative to No Rule		Reductions from New Proposal Relative to No Rule		Difference Between Proposals	
	\$	PM (TPD)	\$	PM (TPD)	\$	PM (TPD)
2019	\$37,134,519	0.029	\$37,134,519	0.029	\$0	0.000
2020	\$167,010,671	0.122	\$167,010,671	0.122	\$0	0.000
2021	-\$6,025,296	0.084	-\$6,025,296	0.084	\$0	0.000
2022	\$118,766,627	0.145	\$194,791,731	0.184	\$76,025,104	0.039
2023	\$132,646,680	0.174	\$57,913,324	0.171	-\$74,733,355	-0.002
2024	\$9,735,666	0.140	\$12,278,002	0.142	\$2,542,335	0.002
2025	\$72,616,331	0.114	\$212,008,857	0.176	\$139,392,526	0.062
2026	\$112,026,776	0.126	-\$14,256,189	0.147	-\$126,282,966	0.021
2027	\$192,034,239	0.158	\$223,578,776	0.179	\$31,544,537	0.020
2028	\$80,865,009	0.152	-\$20,246,117	0.146	-\$101,111,127	-0.006
2029	-\$32,651,049	0.119	\$3,343,264	0.119	\$35,994,313	0.000

17

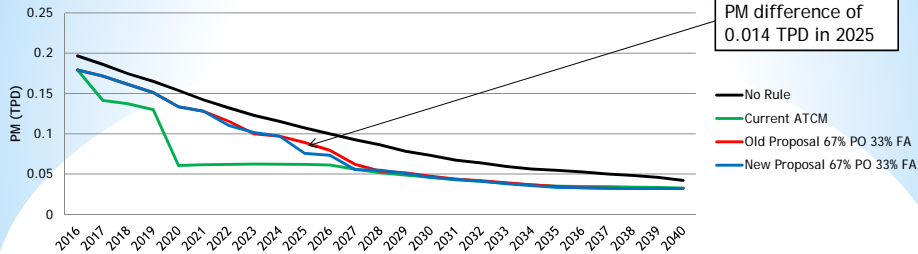
Cost of Ancillary NOx Benefits (Old Proposal – New Proposal)

Year	Benefits from Old Proposal Relative to No Rule		Benefits from New Proposal Relative to No Rule		Difference Between Proposals	
	\$	NOx (TPD)	\$	NOx (TPD)	\$	NOx (TPD)
2019	\$37,134,519	0.806	\$37,134,519	0.806	\$0	0.000
2020	\$167,010,671	2.919	\$167,010,671	2.919	\$0	0.000
2021	-\$6,025,296	2.000	-\$6,025,296	2.000	\$0	0.000
2022	\$118,766,627	3.188	\$194,791,731	4.127	\$76,025,104	0.939
2023	\$132,646,680	3.892	\$57,913,324	3.829	-\$74,733,355	-0.063
2024	\$9,735,666	3.109	\$12,278,002	3.158	\$2,542,335	0.049
2025	\$72,616,331	2.550	\$212,008,857	3.754	\$139,392,526	1.204
2026	\$112,026,776	2.865	-\$14,256,189	3.089	-\$126,282,966	0.224
2027	\$192,034,239	3.084	\$223,578,776	3.519	\$31,544,537	0.435
2028	\$80,865,009	2.871	-\$20,246,117	2.750	-\$101,111,127	-0.121
2029	-\$32,651,049	2.058	\$3,343,264	2.060	\$35,994,313	0.002

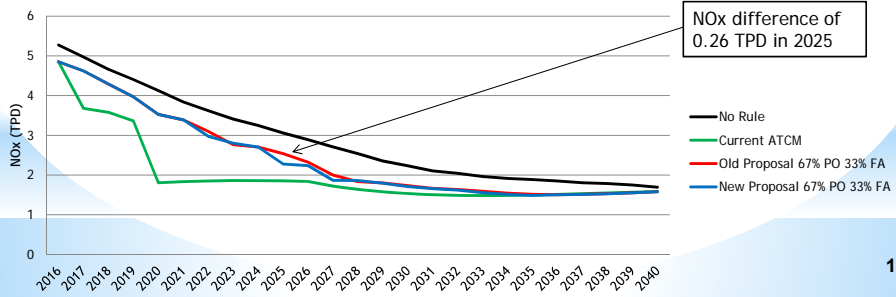
18

Emissions Inventory - SJV

PM (TPD) - SJV

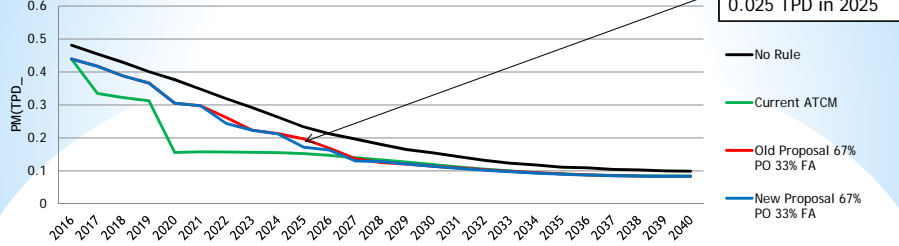


NOx (TPD) - SJV

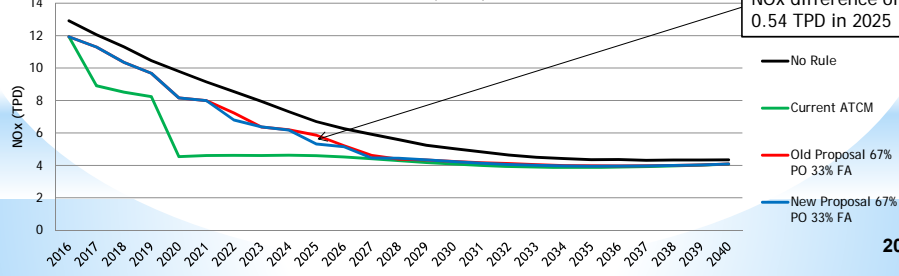


Emissions Inventory - SC

PM (TPD) - SC



NOx (TPD) - SC



Proposed 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 or Tier 2 engines early
 - Must be removed from service in California
 - Remove a Tier 1 by 1/1/2019 or Tier 2 by 1/1/2021
 - Extra 1 year for a specific Tier 3 (including flex) on phase-out schedule only

21

Proposed 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>”

22

Proposed ATCM Changes

- 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
- Other exemptions for certain equipment
 - Portable engines on commercial harborcraft
 - Engines operated exclusively during emergency event
- Add definition for replacement engines
 - Included in the ATCM fleet requirements

23

Proposed 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
- Updated recordkeeping and reporting requirements
 - Updated ATCM compliance statement required for large fleets in fleet average when adding lower tiers or removing Tier 4
 - equipment dealers and rental businesses exempt
 - Annual report for low-use engines
 - Must keep records for each emergency (nature and date)
- Remove obsolete language
 - Tier 0 extension
 - SCR provisions

24

Proposed PERP Changes

- **Definitions**
 - Specific categories will be listed as PEPS
 - Replace “mechanical breakdown” with “engine failure”
 - Remote location is >½ mile from any business, residence, school, etc.
- **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
 - Align with eligibility requirements in ATCM
- **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
- **Temporary registration**
 - Only for cleanest engines - Tier 4 final
 - Certificate expires in 3 months

25

Proposed PERP Changes

- **Clarification on when PERP is invalid**
 - Nuisance already listed
 - Moved generator prohibitions in 2451 to this section
 - Qualify as part of stationary source determined by District
 - Replacement of stationary engine when limits have been reached
 - Recurring use of equipment unit and associated engine
 - Must be onsite for more than 30 days for more than 2 years, or
 - Located onsite for >24 hours and occurs more than twice in one year
 - Engine only equipment is not prohibited
- **Allowable use of registered generators**
 - Electrical upgrade operations expanded to 90 days
 - Maintenance and repair to include stationary generators
 - Engine failure of stationary backup generator
 - District must give approval
 - District notified by stationary permit holder within 72 hours
 - Replacement engine must have same or cleaner emissions
 - Replacement engine must comply with existing stationary permit
 - Operation not to exceed 180 days, unless district grants approval

26

Proposed PERP Changes

- Project review by non-attainment districts
 - Projects using more than 2,500 portable horsepower must notify
 - Districts may perform AQIA and mitigate if exceeds AAQS
 - Projects with only Tier 4 and projects in remote locations exempt
- Rental requirements
 - Rental agreement must be readily available, not onsite
 - Remove the notification requirement for >9 month rentals
 - Records may be kept by company ID with cross reference
- District reporting
 - Districts must only submit annual report if not sending all inspection reports via online DMS
 - Annual report only to include inspections for PERP
 - Must specify registration number for each inspection

27

Proposed PERP Changes

- Identical Replacement
 - Notification extended from 5 days to 30 days
 - 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
- Reporting
 - Submit hour meter readings on all engines at renewal

28

Proposed PERP Changes

- Program Fee Increase
 - Fees must cover cost of program implementation*
 - Fees last adjusted in 2004 (ARB) and 2006 (districts)
 - ARB fees increase at CPI + 20% and District fees at CPI

Initial Registration			
Cost Type	PERP Regulation Cost	PERP Amendment Cost	Change in Cost
ARB Fee	\$270	\$395	\$125
District Fee	\$345	\$405	\$60
Placard Fee	\$5	\$5	\$0
Total for New Registration	\$620	\$805	\$185
Registration Renewal			
Cost Type	PERP Regulation Cost	PERP Amendment Cost	Change in Cost
ARB Fee	\$225	\$330	\$105
District Fee	\$345	\$405	\$60
Placard Fee	\$5	\$5	\$0
Total for Renewal	\$575	\$740	\$165

*Health & Safety Code, § 41752, subd. (d)

29

Proposed PERP Changes

- 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
- Multiple Engine Inspection Discount
 - Districts may send bill for inspection fee difference
 - Fleets that misuse discount will be prevented from future use
- Remove obsolete Tier 0 engine language
 - Tier 0 extension for spark-ignition engines
 - Emission limits

30

Other Issues

- Tier 4 engine feasibility issues
 - Multi-divisional team of ARB staff investigated this matter with the following results:
 - ✓ Team found high-idle, low-load engines which required frequent DPF cleaning
 - ✓ Team worked with manufacturer to identify cause of frequent plugging
 - ✓ Manufacturer worked with CARB certification staff to make changes, and no subsequent issues for >1,400 hours since change
 - ✓ ARB team will work with manufacturers to solve issues as they arise
- Engines operating in hazardous areas
 - ARB will work with EPA on this matter
 - May become ineligible for PERP, districts would permit
- Tier phase-out enforcement
 - Districts need to be able to readily identify tiers in the field
 - Considering methods for field identification and enforcement

31

Next Steps

- Update draft regulatory language
- Staff Report including proposed regulations available early 2017
- Board hearing April 2017

32

For more information:

www.arb.ca.gov/portable/portable.htm

Sign up for the portable listserv:

www.arb.ca.gov/listserv/listserv_ind.php?listname=portable

Send questions or comments via email:

portable@arb.ca.gov