Regulation for In-Use Off-Road Diesel-Fueled Fleets

Chinese Ministry of Ecology and Environment Delegation

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Background

- Regulation reduces oxides of nitrogen (NOx) and diesel particulate matter (PM) from in-use (existing) off-road heavy-duty diesel vehicles in California
- Originally adopted in June 2007
- 2010 Amendments delayed compliance by 4 years and provided additional flexibility
- Encourages replacement of older vehicles or adoption of retrofits.
Applicability

- Affects existing off-road heavy-duty vehicles in California
  - Nearly 150,000 off-road vehicles in over 10,000 fleets
  - Self-propelled vehicles >25 hp used in construction, mining, and other industrial/commercial applications
  - Some 2-engine on-road vehicles with fully integrated auxiliary engines
- Private and public fleets
- no performance requirements for emergency, 50-99 % agriculture, and dedicated snow-removal vehicles
Not Subject to Off-Road Regulation

- <25 hp self-propelled diesel vehicles
- Non-diesel fueled vehicles
- Portable equipment
- Stationary equipment
- Personal use
- 100% agricultural equipment
General Requirements

- Report (through DOORS – online reporting system)
- Label (both sides of vehicle)
- 5 minute idling limit
- Sales disclosure
- Performance requirements
  - Gradually reduce fleet emission through turnover, repower, or retrofit with verified diesel emission control system (VDEC)
  - Meet declining fleet average targets
Fleet Size and Compliance Schedule

- Large Fleets (>5000 hp)
  - 2014 through 2023
- Medium Fleets (2,501 – 5,000 hp)
  - 2017 through 2023
- Small Fleets (< 2,500 hp)
  - 2019 through 2028
Performance Requirements – Fleet Average

- Fleet average index indicates fleet’s overall NOx emissions rate
  - Determined by the horsepower and model year of each engine in the fleet
- If fleet average index <= fleet average target, no further fleet action to reduce emissions required (determined annually)
- Meet fleet average targets by:
  - Turnover – remove old “tier” engines/vehicles
  - Add clean vehicles to fleet
  - Retrofit – add after-treatment to reduce PM or NOx
Performance Requirements – Best Available Control Technology (BACT)

- Option for fleets in lieu of meeting the fleet average targets
- Fleet must turnover or install VDECS on a certain percent (BACT rate) of fleet horsepower each year
- Must apply BACT to Tier 0/1 vehicles first
- Actions must be completed before January 1st of compliance year
# BACT Compliance Rates

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Low-Use Vehicles

- Year-by-year low-use
  - < 200 hours per year
  - Three-year rolling average
    - < 600 hours every 3 years
- Permanent low-use
  - < 200 hours per year
- Working non-resettable hour meter
- Annually report hours to CARB
Restrictions on Adding Vehicles

- No fleets may add vehicles with Tier 0 and Tier 1 engines
- Large and Medium fleets may not add Tier 2
- Small fleets can still add Tier 2 until 2023

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(Minimum Engine Tier Allowed to be Added to a Fleet)
Fleet Transition to Cleaner Engines

Year End Engine Count by Tier

- Tier 0
- Tier 1
- Tier 2
- Tier 3
- Tier 4i
- Tier 4f

Year Range: 2009 to 2018
Implementation

- CARB staff assists fleets with reporting and compliance questions
  - [www.arb.ca.gov/ordiesel](http://www.arb.ca.gov/ordiesel)
  - doors@arb.ca.gov
  - hotline (1-877-59DOORS)
- Extensive FAQ and advisories
- Free 3-hour class
- Outreach to new fleets
- Referrals to Enforcement

CARB
Questions