Appendix G

Alternatives Considered

Throughout the regulatory amendment development process, staff worked with stakeholders and evaluated a number of suggested alternatives to the proposed amendments. This appendix provides a description of the alternatives considered and the reasons they were not selected.

1. Make No Changes to the Regulation

Keeping the regulation intact without changes would not be responsive to Board directives, would not consider the impact of the economy on impacted fleets, would not reduce compliance costs, and would not protect that the emissions reductions envisioned would be achieved. Therefore, this alternative was rejected.

2. Increase "Low-Use Vehicle" Threshold to 5,000 Miles per Year Based on Miles Travelled in California and Not on Total Miles

One regulatory alternative considered would have increased the low-use mileage exemption to 5,000 miles (based only on miles travelled in California). However, staff counts suggest that there are more than 250,000 trucks in non-California registered fleets, based outside of California, with an engine model year (MY) 2006 or older. Such an amendment could result in significantly higher emissions from large out-of-state fleets which could dispatch non-compliant trucks into California, each driving below the 5,000 mile low-use exemption. California-based motor carriers that compete directly with out-of-state motor carriers would be placed at a competitive disadvantage. For these reasons this alternative was rejected.

Another alternative considered was to increase the low-use mileage exemption to 5,000 miles total on the truck, but not provide a sunset date of 2020. This would allow a potentially large number of trucks to operate in California without a diesel PM filter after 2020. Because this result is not consistent with the Diesel Risk Reduction Plan, the alternative was rejected.

3. Extend Compliance Deadlines, Increase Mileage Thresholds, and Exempt Vehicles Operating Less than 7,500 Miles per Year for Construction Trucks

Stakeholders estimate that there are approximately 44,000 heavy tractors and unitized diesel powered vehicles used for construction. They requested staff to consider a proposed three tier Low-Mileage Construction Truck extension as follows:

- Ultra–Low-Mileage for less than 7,500 annual miles (exempt with no expiration);
- Very–Low-Mileage for 7,501 to 30,000 miles with a 2023 compliance deadline; and
- Low–Mileage for 30,001 to 65,000 annual miles with compliance by 2020.

The proposal would exempt between 60 and 85 percent of most construction trucks from compliance obligations until 2023. As a result, the Diesel Risk Reduction Plan goal would not be met. In addition, allowing vehicles to continue to be exempt up to 7,500 miles indefinitely would also fail to provide the Oxides of Nitrogen (NOx) emission reductions needed to meet 2023 SIP obligations. Therefore, this alternative was rejected.

4. Require Opacity Testing in Attainment Areas Instead of PM Filters

Several stakeholders suggested that we replace the diesel PM filter requirements in the regulation simply with more stringent opacity standards and testing. This is not a new suggestion, and staff has evaluated similar recommendations in the past. Opacity testing measures the ability of light to pass through a truck's exhaust plume of soot, and current standards are set at either 40 percent or 55 percent, based on the age of the truck. Opacity testing that is currently conducted through ARB's smoke inspection programs provides a cost-effective means of identifying grossly emitting or tampered trucks in immediate need of repair and maintenance.

However, opacity testing is only a screening tool as it is not a rigorous measurement of PM emissions, and trucks that pass an opacity test but are not equipped with a diesel PM filter would still have relatively high PM2.5 emissions because those emissions are not visible. This has been confirmed through ARB field testing that shows, on average, diesel PM filter equipped trucks have five times lower opacity than properly maintained unfiltered trucks (with most diesel PM filter equipped trucks having opacity readings of zero percent). Further, emission testing conducted under controlled laboratory conditions show that unfiltered trucks emit 100 times more PM than filter equipped trucks. Accordingly, requiring use of diesel PM filters is necessary to achieve significant reductions in diesel PM emissions. Opacity testing is not sufficient to meet the goals of the Diesel Risk Reduction Plan and does not adequately reduce exposure to diesel PM. Based on these concerns, this alternative was rejected.

5. Extend the 2010 Engine MY Requirement to 2027 for Heavy Vehicles with 2007 to 2009 MY Engines Purchased Before January 1, 2014

In this alternative, 2007 to 2009 MY engines purchased before January 1, 2014, would be allowed to operate after the 2023 requirement for total fleet turnover to 2010 technology trucks. Without full deployment into the fleet of lower emitting 2010 MY engines, this alternative would result in higher emissions in 2023 that would jeopardize attainment with ARB commitments in the SIP. As a result, this alternative was rejected.

6. Delay the Replacement of 2007 to 2009 MY engines beyond 2023 with the Purchase of Engines That Are Certified below the Current 2010 NOx Emissions Standard

In this alternative, a fleet would be permitted to keep trucks having 2007 to 2009 engines so long as they purchased trucks with engines certified below the current 2010 engine emission standards. However, because of significant differences in emissions between trucks certified to these two standards, it would be extremely difficult to protect the overall emission reductions of the regulation. For example, in a 10 truck fleet, it would take between 3 and 6 lower emitting trucks certified to a 0.02 g/bhp-hr engine (depending on the mileage of each truck) to offset keeping just one 2007 standard truck (at 1.2 g/bhp-hr) in the fleet. Given the number of 2007 trucks that potentially would be allowed to operate after 2023 in this alternative, coupled with the current limited projected availability of lower emitting trucks in the 2020 timeframe, this alternative was rejected.

7. Remove PM Filter Requirements for Small Fleets

Stakeholders suggested removing the PM filter requirements for small fleets altogether. However, small fleets (3 or fewer trucks) contribute about 50 percent of statewide NOx and PM emissions, and represent half of the emissions benefits from the regulation. Further, many small fleet operators compete with other fleets that are currently compliant with the Rule. Enabling this alternative would create a competitive disadvantage for various owners and other fleets that already complied, and would eliminate a significant fraction of emissions benefits. Therefore, staff rejected this alternative.

8. Allow Limited Miles Outside of NOx Exempt Areas

Stakeholders requested exemptions for trucks reported as operating exclusively inside NOx exempt areas which would allow them to travel beyond the boundary for a limited number of miles per year. Staff recommends that only under very limited situations such as emergency use for protection of the public health should this be allowed. This proposal would not be practical to enforce and would result in higher emissions in areas that are in the greatest need of emissions reductions. This would create unnecessary public health issues for residents living in the non-attainment areas, including environmental justice and disadvantaged communities. Therefore, staff rejected this proposal.