

Comparison of Emissions Benefits of CARB Diesel vs Federal Diesel

February 26, 2008

California Environmental Protection Agency



Air Resources Board

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Agenda

- Introduction
- Background
 - AB679 (Calderon)
 - Legislative Intent
- Test Schedule
- Funding
- Future Discussion Topics
 - Candidate Fuel Selection
 - Determining Test Matrix
- Next Meeting

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Background

- **Assembly Bill 679 (Calderon)**
 - Requires ARB to convene a technical advisory panel to develop a test protocol
 - Test program shall measure the emissions benefits of CARB diesel fuel
 - Conduct test program
 - Report the results to the Senate Committee on Environmental Quality, the Senate Committee on Transportation and Housing, and the Assembly Committee on Transportation

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Background

- **Legislative Intent**
 - Federal ultralow may produce emissions benefits closer to those of CARB diesel
 - Thought to be especially significant for HD diesel engines employing new technology (e.g. EGR)
 - Higher cost of CARB diesel is a competitive disadvantage for CA trucking industry
 - Develop and implement test protocol to measure differences in NO_x & PM emissions between CARB diesel and Federal ultralow diesel

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Test Schedule-Test Plan

- Emissions Testing – Scheduled to begin in Fall 2008
 - Test protocol development
 - Technical advisory panel, stakeholders
 - Currently soliciting input
 - Draft test protocol available for review at next meeting

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Proposal Received from University of California, Riverside

“Assessment of the Emissions from the Use of California Air Resources Board Qualified Diesel Fuels in Comparison with Federal Diesel Fuels”

Principal Investigators: Thomas D. Durbin (UCR) and J. Wayne Miller (UCR)
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Funding

- Test program currently funded for \$1M
 - Proposed scope:
 - Engine dyno – 3 test engines, multiple test cycles
 - Chassis dyno – 12 to 15 test vehicles, multiple test cycles
 - Fuels – 1 'representative' CARB diesel, 2 Federal diesel 'blends'
 - Emissions measurements – THC, NMHC, CO, CO₂, NO_x, PM
- Additional funding needed to expand scope
 - Additional test engines/vehicles, gas-phase toxic HC's, carbonyl compounds, polycyclic aromatic hydrocarbons, elemental and organic carbon and size-resolved PM

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Currently Seeking In Kind Contributions

- Fuels
 - US EPA diesel fuel
- Test Engines
- Test Vehicles
- Other

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Future Discussion Topics

- Range of fuel properties from commercially available Federal ultralow diesel fuel
- Determining vehicle/engine matrix for emissions testing
- Test cycle(s)

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Next Meeting

- Tentatively scheduled for March, 2008

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