

# Comparison of Emissions Benefits of CARB Diesel vs Federal Diesel

February 26, 2008

California Environmental Protection Agency

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**Air Resources Board**

# Agenda

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

- 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

- 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<sub>x</sub> & PM emissions between CARB diesel and Federal ultralow diesel

# 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

## 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)

University California Riverside-CE-CERT

# 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, CO<sub>2</sub>, NO<sub>x</sub>, 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

# Currently Seeking In Kind Contributions

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



# Future Discussion Topics

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

## Next Meeting

- Tentatively scheduled for March, 2008

# Contact Information

- Gary Yee, Manager
  - (916) 327-5986
  - [gyee@arb.ca.gov](mailto:gyee@arb.ca.gov)
- Dean Bloudoff, Staff
  - (916) 322-1521
  - [dbloudof@arb.ca.gov](mailto:dbloudof@arb.ca.gov)