

# Modeling Diesel Fuel Effects on Emissions

*FACA/CAAAC Mobile Sources  
Technical Review Subcommittee  
1/17/01*

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# *Overview*

Objective

Analysis Plan

General Approach

Schedule

Background

Questions

Plan of Action

Contacts

# Objective

## Quantify effects of diesel fuel parameters

- Fuel parameters:
  - cetane, aromatics, T90, density, sulfur, oxygen, etc.
- Pollutants
  - NO<sub>x</sub>, HC, and PM
- Vehicles
  - HD highway and nonroad

# Diesel Fuels Analysis Program

- General approach
  - Short-term project
  - Involve states, industry, and other stakeholders
  - Perform high-quality, thorough analysis of existing data
  - Publish technical report

# Background

- There have been over 50 studies of the effects of diesel fuel properties on emissions since the standards for low sulfur highway diesel were set
- Preliminary OTAQ review suggests need to reconsider estimates on emissions benefits

# Action Plan

- Attain data/studies to analyze and develop analysis plan
- Post analysis plan and list of test data sources on website
- Perform regression analysis to estimate effects of diesel fuel parameters- assess national inventory impacts
- Report and receive comment on regression study
- Provide instruction for local areas to quantify alternative diesel fuel formulations for specific local fleets and calendar years

# Analysis Plan

- Choose studies that meet certain criteria:
  - No. 2 diesel fuel meeting ASTM D-975
  - Production-level heavy-duty CI engines
  - Data is readily available
- Prepare database

## Analysis Plan (cont.)

- Regression analysis
  - Similar development procedure as Complex Model
- Preparation of model
  - Apply appropriate estimates to engine groups by calendar year
  - Extension to nonroad



# Proposed Schedule:

<b>12/21/00</b>	Inform major stakeholders of general approach.
<b>1/19/01</b>	Post FACA presentation on website.
<b>1/26/01</b>	Post analysis plan on website.
<b>1/31/01</b>	Stakeholder data/studies due to EPA for possible inclusion in analysis.
<b>3/02/01</b>	Complete data analysis.
<b>3/20/01</b>	Post EPA draft technical report on website.
<b>4/09/01</b>	Comments on report due to EPA.
<b>5/15/01</b>	Release final report.

Questions?



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Team Website:

[www.epa.gov/otaq/models/analysis.htm](http://www.epa.gov/otaq/models/analysis.htm)