Diesel Retrofits: SIP and Conformity Guidance

Presentation for Mid-Atlantic Diesel Collaborative
Diesel Emissions Workshop
August 21, 2006
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New Retrofit Opportunities

- Diesel retrofit projects are a cost-effective way to improve air quality and protect public health
  - Emissions reductions up to 90% for PM, 50% for NOx, and 90% for VOC
- Emission reductions from diesel retrofits can help states meet 8-hour ozone and PM2.5 ambient air quality standards
- Transportation bill (SAFETEA-LU) directs MPOs to give priority to funding diesel retrofits under Congestion Mitigation and Air Quality Improvement Program (CMAQ) ($8.6 B over 5 years)
  - Nonroad retrofits are now eligible for CMAQ dollars
- Energy Policy Act of 2005 requires that EPA provide guidance for including retrofits in SIPs
  - Diesel emission reduction provision authorizes additional funds for retrofits

How is EPA's National Clean Diesel Campaign supporting retrofit projects?

- The Campaign seeks to reduce emissions from the 11 million diesel engines in the existing fleet through:
  - Technology verification
    - Rigorous EPA test program
    - MOA between EPA and CARB
    - Many retrofit technologies already verified
      - http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm
  - Incentives such as grants, innovative financing, and others
  - Coalition-building and outreach
  - Technical and policy analysis

Diesel Retrofits – SIP and Conformity Guidance

- Released June 9, 2006
  - www.epa.gov/otaq/stateresources/transconf/policy.htm
- Productive and inclusive stakeholder process including:
  - DOT
  - STAPPA/ALAPCO
  - AASHTO, AMPO, NARC
  - Environmental groups
  - APTA, AGC, Diesel Technology Forum
  - And others

Outline of Guidance

- Describes new opportunities for retrofit projects
- Provides tools for quantifying reductions
- Outlines how to use retrofits in SIPs, transportation conformity, and general conformity
- Offers success stories, examples, flowcharts and model trading rule for transportation conformity
- Offers options for expediting SIP process

What is covered by the guidance?

- Highway and nonroad diesel vehicles, engines, and equipment
- EPA and CARB verified technologies
- Engine replacements or early replacement of vehicles or equipment

Using Retrofit Reductions: Multiple Options

- SIPs
  - Highway and nonroad retrofit projects are treated like any other SIP control measure
- Transportation Conformity
  - Highway retrofit projects can be used without any change in the SIP
  - Nonroad retrofit projects require a SIP revision to use reductions
- General Conformity
  - Nonroad retrofit projects can be used without any change in the SIP

SIP Options

- Highway and nonroad retrofit reductions must meet same requirements as any other SIP control measure

- Retrofit projects can be included as:
  - A voluntary measure, under the Voluntary Mobile Source Emission Reduction Program (VMEP) SIP guidance
    - 3% VMEP cap could be exceeded on a case-by-case basis through SIP approval process
  - As a mandatory measure (no cap on reductions)
    - e.g., where states/cities require retrofitted equipment in their transportation construction contracts
    - Guidance notes that preemption issues under CAA Section 209 may apply in some cases for retrofits, so consult with EPA

Transportation Conformity Options

- Highway retrofits can be credited in transportation conformity, like any other on-road measure without changes to SIP

- Guidance for nonroad retrofit options:
  - Safety margin:
    - Apply nonroad retrofit reductions to SIP's motor vehicle emissions budget, to increase budget (for areas with surplus reductions)
  - Trading program:
    - Create a SIP trading program to allow nonroad retrofit credits to offset increases from transportation sources

What is a safety margin and how is it used?

- Emission reductions beyond those needed to demonstrate attainment in the SIP
- If area can attain without reductions from a nonroad retrofit project, state can allocate extra reductions from the project to the motor vehicle emissions budget in the SIP
- Must be done through the SIP process

Safety Margin Example

- Total inventory needed to attain:
  - Nonroad 100 tons
  - Highway 100 tons
  - Stationary and area 200 tons
  - Total 400 tons

- Impact of nonroad retrofit project reductions
  - Project reductions 5 tons
  - New nonroad inventory 95 tons
  - New total 395 tons
  - Safety margin 5 tons

Safety Margin Example (cont'd)

- State SIP submittal says there is a 5 ton safety margin and that safety margin is allocated in the SIP to the motor vehicle emissions budget
  - Budget without safety margin 100 tons
  - Budget in SIP with safety margin 105 tons

- New budget applies for all analysis years from the attainment year and later

What is a trading program and how is it used?

- A process that allows nonroad emission reductions to be traded to offset highway emissions in a conformity determination

- Must be established through the SIP process
  - Once established, individual trades do not require a SIP revision

Trading Program Example

- Total inventory needed to attain:
  - Nonroad 100 tons
  - Highway 100 tons
  - Stationary and area 200 tons
  - Total 400 tons
- Nonroad retrofit project is implemented but not included in the SIP
  - Nonroad SIP inventory (unchanged) 100 tons
  - Budget (unchanged) 100 tons
  - Project reductions in attainment year (not included in SIP) 5 tons
- In subsequent conformity determinations for the attainment year, the MPO could offset as much as 5 tons of excess highway emissions using retrofit project reductions that would occur in that year

Additional information on safety margins and trading programs

- Guidance includes:
  - Detailed step-by-step guide to the process for including either option in a SIP
  - Flow charts of the processes
  - Two options to help expedite the SIP process
    - stand-alone SIPs
    - parallel processing
  - Model rule for establishing a trading program

General Conformity Options

- General conformity applies to all federal actions that are not covered by transportation conformity
  - e.g., airports & military bases
- Nonroad retrofits can be used to mitigate or offset emissions resulting from federal actions
- Aviation Act of 2003 directed FAA to reduce ground emissions at airports
  - FAA's Voluntary Airport Low Emissions (VALE) program allows airport sponsors to use certain funds to finance airport air quality improvements (including retrofits)

Quantifying Reductions From Retrofit Projects

- EPA recommends use of National Mobile Inventory Model (NMIM)
  - EPA will review alternative approaches on a case-by-case basis

- What is NMIM?
  - It is not a new model; it does not start a new conformity grace period
  - New inventory development tool that creates input files, runs MOBILE6.2 and NONROAD, and processes output
  - Includes capability to estimate reductions from retrofit projects based on user inputs
  - Can be used for general inventory development or just to calculate reductions from retrofit projects

What should you be doing now?

- States are developing new SIPs now
  - This is the best time to work on including any retrofits as SIP measures in 8-hour ozone or PM2.5 SIPs
  - Also, adding a trading program or safety margin in the SIP now for transportation conformity purpose may be more efficient than making a revision later
- Some areas may need every reduction they can to show attainment
  - This is best time to be developing retrofit projects for maximum impact by the attainment date
  - Work with your partners in the consultation process to determine the best use for retrofit reductions

Take-home message

- Retrofit projects are a cost-effective way to improve air quality
- You have multiple options for incorporating retrofit projects in SIPs, transportation conformity, and general conformity
- EPA staff are ready to work with you to help you develop and implement retrofit projects

For more information

- SIP and conformity guidance
  - www.epa.gov/otaq/stateresources/transconf/policy.htm
- National Clean Diesel Campaign (NCDC)
  - www.epa.gov/cleandiesel