



# An Environmental Perspective: Implementing the 2007 Highway Diesel Rule

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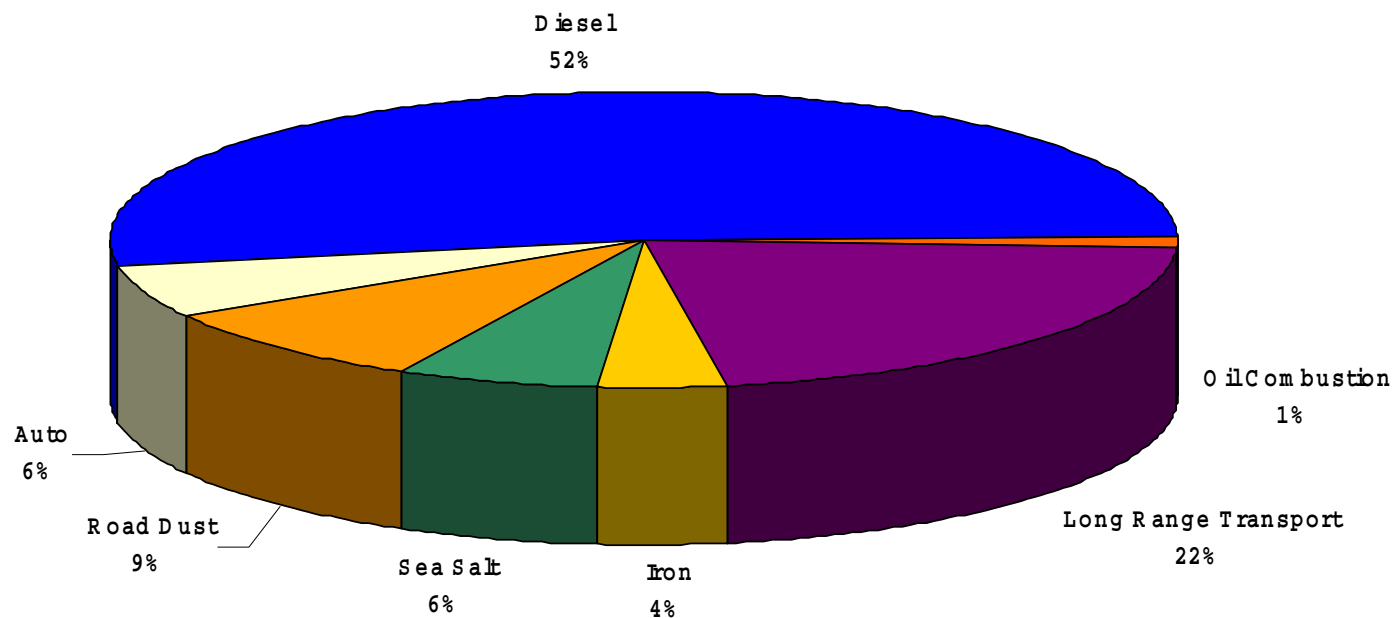
# Why We Care About Diesel Emissions:

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- ❑ Particulate matter:
  - ✓ Exacerbates asthma and other pulmonary impacts, cancer and linked to roughly 20,000 premature deaths/year
  - ✓ More prevalent in urban corridors
- ❑ Toxics:
  - ✓ At least a likely carcinogen, according to EPA, CARB, IARC, etc.
  - ✓ 40 different TACs and HAPs interacting together
  - ✓ Changes in fuel composition and combustion can lead to unintended consequences that must be addressed
- ❑ Nitrogen Oxides:
  - ✓ Summertime smog, acid rain, nutrient pollution of waterways, crop and forest damage
  - ✓ 12% of miles traveled = 1/3 of national NO<sub>x</sub> emissions
- ❑ Global Warming:
  - ✓ Switching to diesel improves fuel economy, but does it reduce global warming?
  - ✓ *News Flash*: Black Carbon in Diesel Soot may create a short-term global warming problem with regional impacts—but may be fixed by PM traps

# Diesels Emit Disproportionately Higher PM

## Average PM Source Contribution in Midtown Manhattan

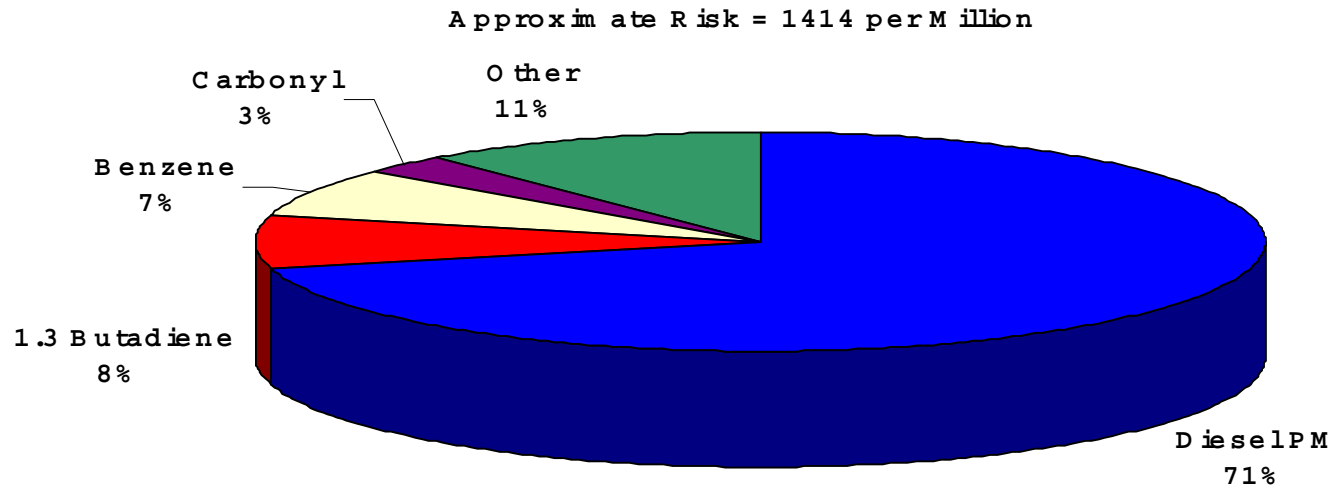


Source: New York State PM<sub>10</sub> Implementation Plan, September 1995.



# Diesels Emit Disproportionately Higher Toxics

## Average Los Angeles Basin Cancer Risk Apportionment



Source: California Air Resources Board.



# Benefits of the 2007 Highway Diesel Rule

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- Systems Approach maximizes environmental and health benefits, while spreading costs of compliance
- Cost-benefit analysis overwhelmingly positive
  - \$66 Billion/year net benefit, when fully implemented
- Opens door to cleaner diesel NREs and LDVs
  - Extending sulfur and emissions standards to nonroad sector now proposed
  - Diesel LDVs at Tier 2 Bin 5 now possible—could this unlock the fuel economy debate?



# Annualized Benefits of the 2007 Diesel Rule

(when fully implemented)

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- ❑ Will cut 8,300 premature deaths
- ❑ Will eliminate more than 360,000 asthma attacks and 386,000 cases of respiratory symptoms in asthmatic children, and 23,000 cases of acute or chronic bronchitis.
- ❑ Will save 1.5 million lost work days.
- ❑ Will provide net annual benefits that should exceed \$66Billion (1999 US\$)
  - ❑ Consumer fuel cost should be less than 5 cents/gallon
    - ❑ Upgrading refineries and pipeline distribution systems
  - ❑ Increased vehicle cost should be roughly 1%
    - ❑ Developing advanced emission control technologies
- ❑ Will be the “environmental equivalent” of eliminating 13 million trucks without any limitation on trucking or travel.



# Regulatory Certainty Breeds Innovation and Investment...

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- CDIRP: “very encouraged by the rate of progress to date”... “significant progress is being made to develop emission control technologies” for 2007
  - CDIRP on NOX adsorbers:
    - “Rapid technology development is due to the certainty” of the Rule’s standards and dates
      - NOx adsorbers at 70% efficiency already, said CDIRP
    - “Technological challenges remain, but none is considered to be insurmountable at this time.”
  - CDIRP on PM Traps:
    - International has already certified school bus at 2007 PM standard



## ...so ATA members are wrong to object now...

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- In June, some ATA members called on EPA to delay the rule
- But 0.2 g/bhp-hr NO<sub>x</sub> deadline is still 7 years away—and PM target has already been reached
  - EGR, SCR, NO<sub>x</sub> adsorbers are all progressing rapidly
- Historical precedent is clear: standards will be met, at lower cost than expected
  - *See, e.g., catalytic converters and the acid rain program*



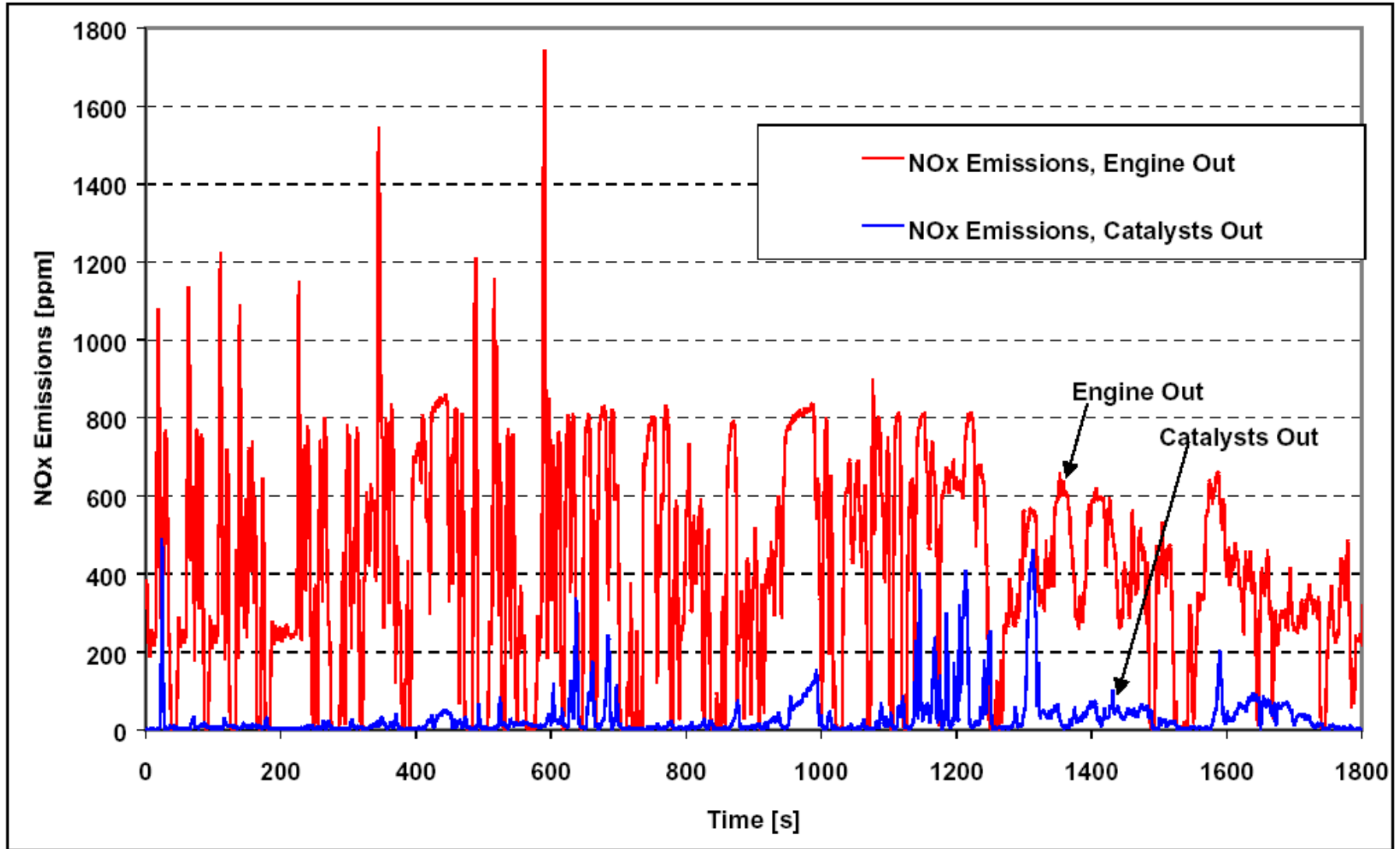


## ...And, the glass is more than half-full

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- EPA struck the right balance among many different stakeholders with diverse needs
- Systems approach spreads costs widely throughout affected industries—and benefits are achieved throughout the nation

# Looking Beyond NO<sub>x</sub> Adsorbers, SCR Can Be Clean...



Source: Umweltbundesamt, 2003



## ...But Are They Right For The U.S.?

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- European emission tests and Centrally-Fueled Fleet (CFF) experiences are encouraging
- But lack of U.S. urea infrastructure is huge hurdle
  - No plans to create infrastructure exist
  - SCR w/o urea = uncontrolled NO<sub>x</sub> emissions
- So, companies that choose SCR must bear the burden of keeping their engines clean by:
  - Building engines that protect against operating w/o urea
  - Including OBD systems that warn about low urea levels
  - Calibrating their systems to assure NO<sub>x</sub> levels maintained even w/o urea, because there are no “tamper-proof” systems
  - Supporting state I & M programs that include NO<sub>x</sub> testing
- Can a nationwide urea system be ready by 2010?
  - Without it, SCR might be for CFFs only

# Concluding Thoughts

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- Cleaner diesels must be a critical component of our future's good health
- There are at least 8,300 reasons to ensure full and timely implementation of the 2007 Highway Diesel Rule
- And, there are another 9,600 reasons to extend this Rule's successes to the nonroad sector





# For more information

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- NRDC looks forward to working with all stakeholders towards a successful implementation of the 2007 Highway Diesel Rule
- For more information, please contact Rich Kassel at [rkassel@nrdc.org](mailto:rkassel@nrdc.org)