

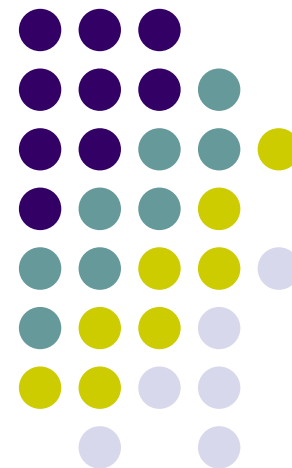
# Clean Fuels and Vehicles: Importance for Urban Air Quality

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# Air Quality and Mobile Sources



- **Concern: Air pollution leads to significant and preventable public health and economic costs.**
  - These costs include mortality, chronic illness, hospital admissions, lower worker and agricultural productivity, IQ loss, and reduction of visibility at national parks.
  - For example, meeting existing U.S. fine particle standards will **prevent** at least: 15,000 premature deaths; 75,000 cases of chronic bronchitis; 10,000 hospital admissions for respiratory and cardiovascular disease; hundreds of thousands of occurrences of aggravated asthma; and 3.1 million days when people miss work.
- **Benefits are clear...US example: fuel and vehicle standards result in enormous benefits**
  - Achieving clean air is an engine for, and not a hindrance to, economic growth.
    - Since 1970, aggregate emissions of the six principle air pollutants have gone down by 54%, even as the economy has expanded by 187%, vehicle miles traveled are up 171%, energy demand has increased by 47%, and our population has gone up by 40%.



**Most of the reduced premature mortality is attributable to reductions in exposure to fine particulates and lead.**

**We expect that the benefits in developing and transition countries will be similar, if not greater.**

Shanghai, 2004



# EPA Domestic Actions

- Lead Phase-out Completed
- Actions for Fuel and Vehicle Standards:
  - Heavy-Duty highway engines
  - Gasoline engines: Tier 2
  - Non-Road engines
- Voluntary Diesel Retrofit Program (National Clean Diesel Campaign)

## *Example:*

### **EPA Heavy-Duty Diesel Standards**

- **Sulfur in fuel reduced to 15 ppm by 2006; vehicle technology phased in over time**
- **Health benefits:** *The program will prevent annually:*
  - Over 8,300 premature deaths
  - Over 750,000 respiratory illnesses
  - 1.5 million lost work days
- **Benefits are 16 times greater than costs**
  - Monetized benefits: \$70.3 billion/year
  - Compliance costs: \$4.3 billion/year
    - Estimated at \$1,200-1,900 per engine
    - About 5 cents per gallon of fuel

# What is EPA Doing Internationally?



- Active partner in the Partnership for Clean Fuels and Vehicles
- Provide technical assistance and capacity building:
  - Lead phase-out
  - Diesel retrofit pilot projects and information sharing on diesel retrofit technologies and fleet selection
- Develop and share tools: IVEM, BenMap, PEMS



## PM Emissions with Trap



- Typical test filter – current standards
- Test filter – 2007 standards
- Unused test filter



# Global Effort: What Countries Can Do To Take Action



## Background:

- Technology exists to lower both diesel and gasoline vehicle emissions to very low levels
  - Reducing sulfur in fuels
  - Requiring advanced emissions control technology
- Every study has found benefits far outweigh costs; the magnitude of the benefits depend on local pollution profile
- Not moving forward on clean fuels and vehicles condemns countries to years of air pollution and adverse health effects

## Actions:

- Eliminate lead in gasoline
- Put in place new vehicle and fuel standards
- Retrofit older diesel vehicles
- Quantify the costs and benefits
- Work with all stakeholders on solutions and implementation and share experiences at the international level