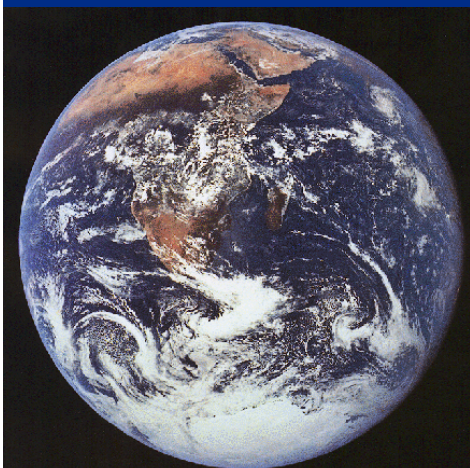


# Low Carbon Transport in Asia: Strategies for Optimizing Co-benefits

Hayama, Japan  
26 June 2009

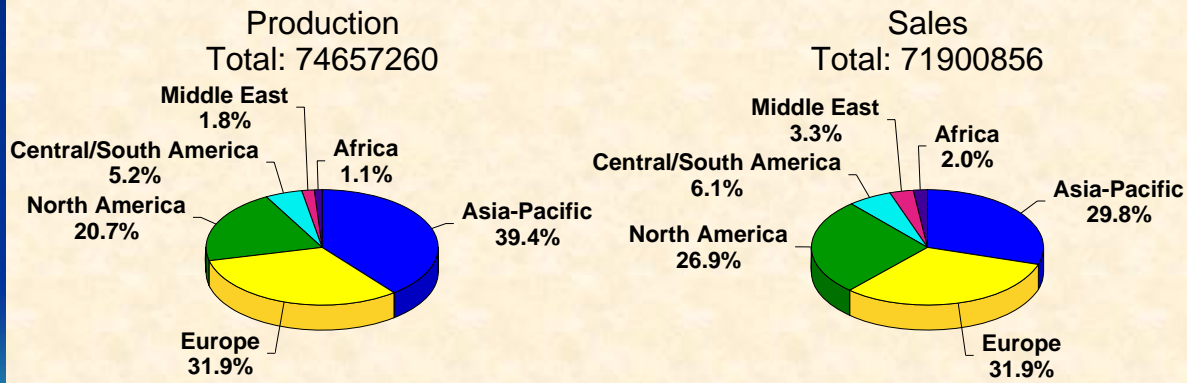


Michael P. Walsh  
International Consultant  
Chairman, Board of Directors,  
International Council on Clean  
Transportation

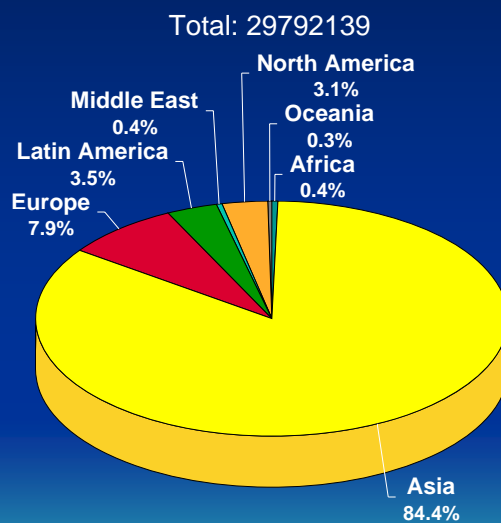
1



# Global Vehicle Production and Sales by Region (2007)

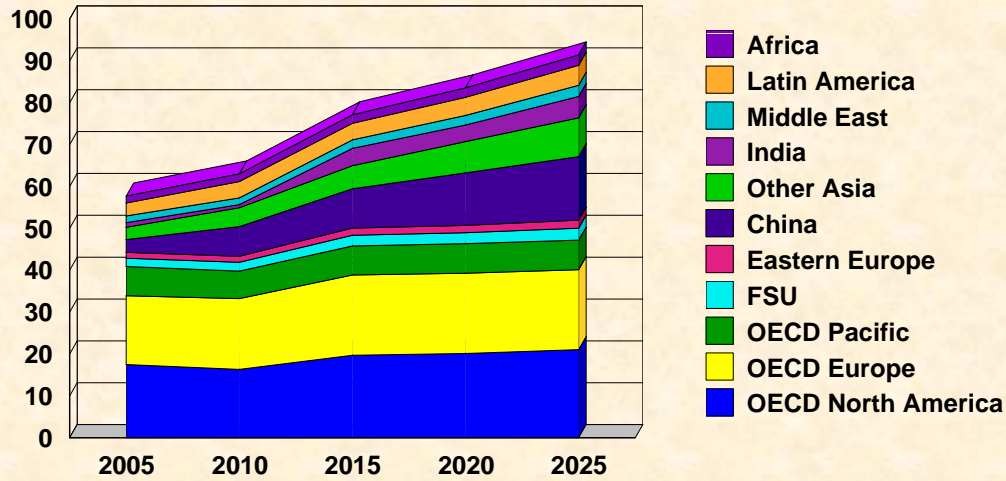


# The Global Market For New Motorcycles and Mopeds



Source: Honda Facts & Figures

# Global Forecast of Light Duty Vehicle Sales (Millions)



Source: IEA  
Lew Fulton



Beijing November 2004

## Pollution Shifting From Coal Based To Vehicle Based

Shanghai November 2004



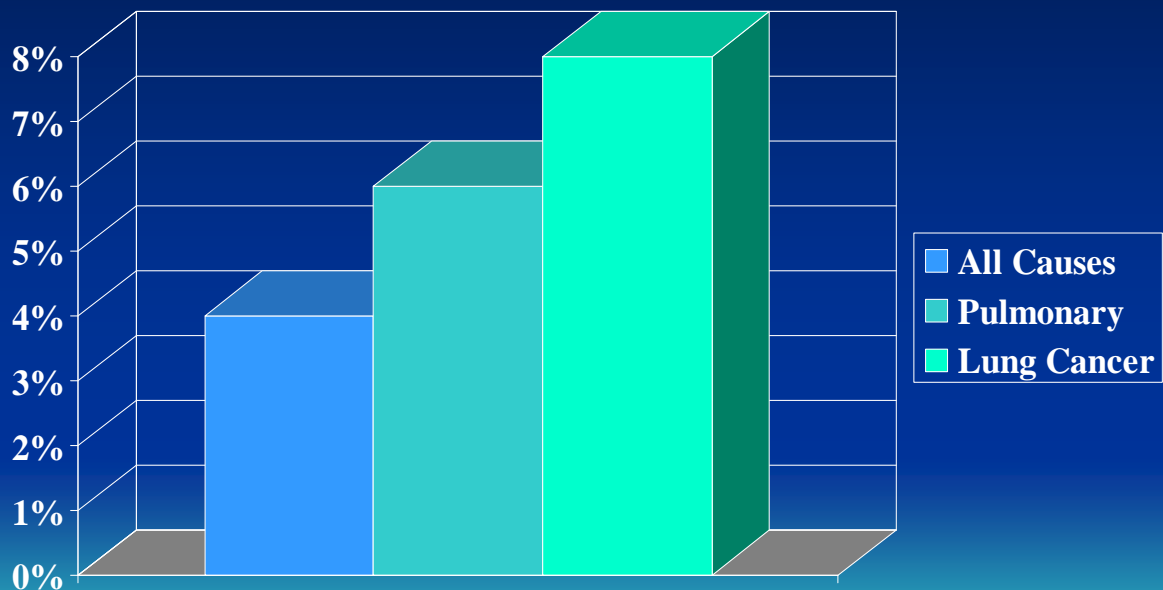
# One Result: Serious Health Concerns

- WHO Concludes ~ 800,000 Premature Deaths Each Year From Urban PM; Most in Asia
- Numerous Studies in Europe & US Consistently Link PM With Premature Deaths, Hospital Admissions, Asthma Attacks, Etc.
- No Evidence of a Threshold
- PAPA Project Indicates Similar Effects in Asia
- Ozone, NO<sub>2</sub>, Various Toxics Also Serious Health Concerns



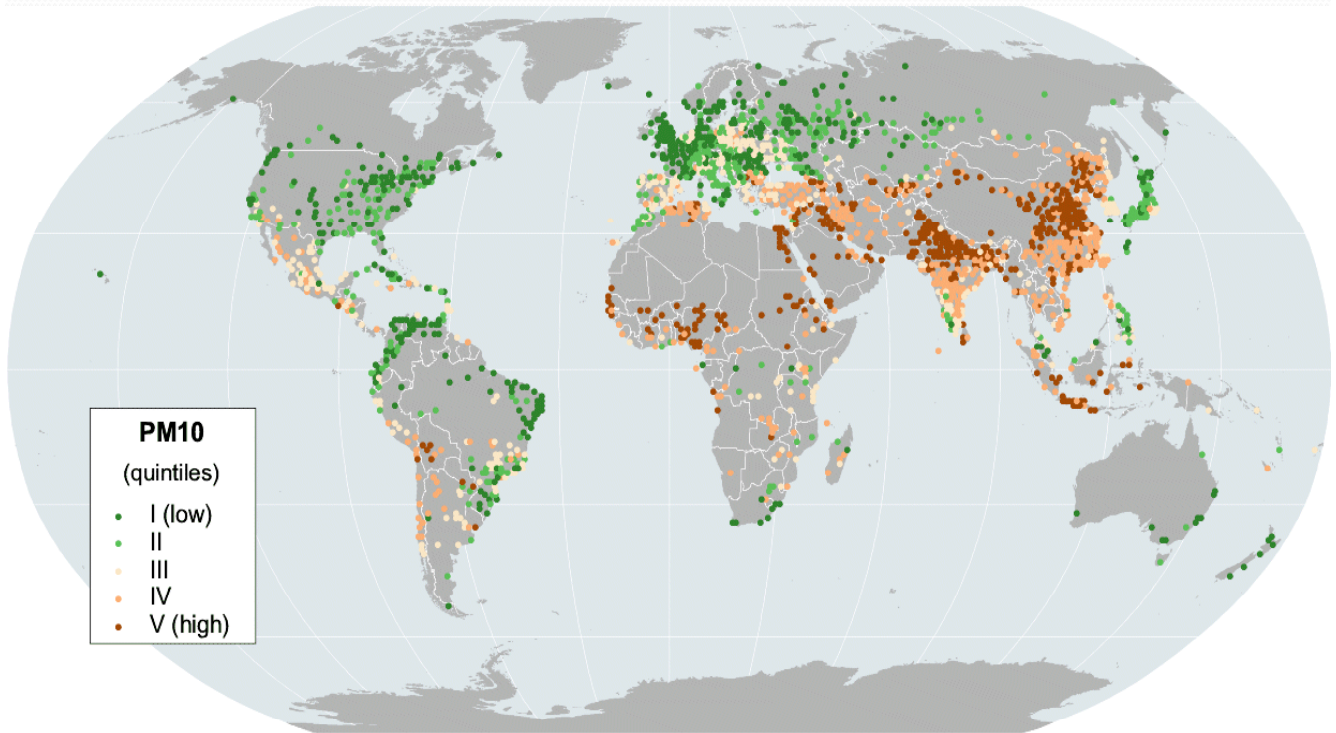
7

## Increased Risk of Premature Mortality Due To 10 $\mu$ g/m<sup>3</sup> PM<sub>2.5</sub>



Journal of American Medical Association, March 2002

# PM<sub>10</sub> in Major cities



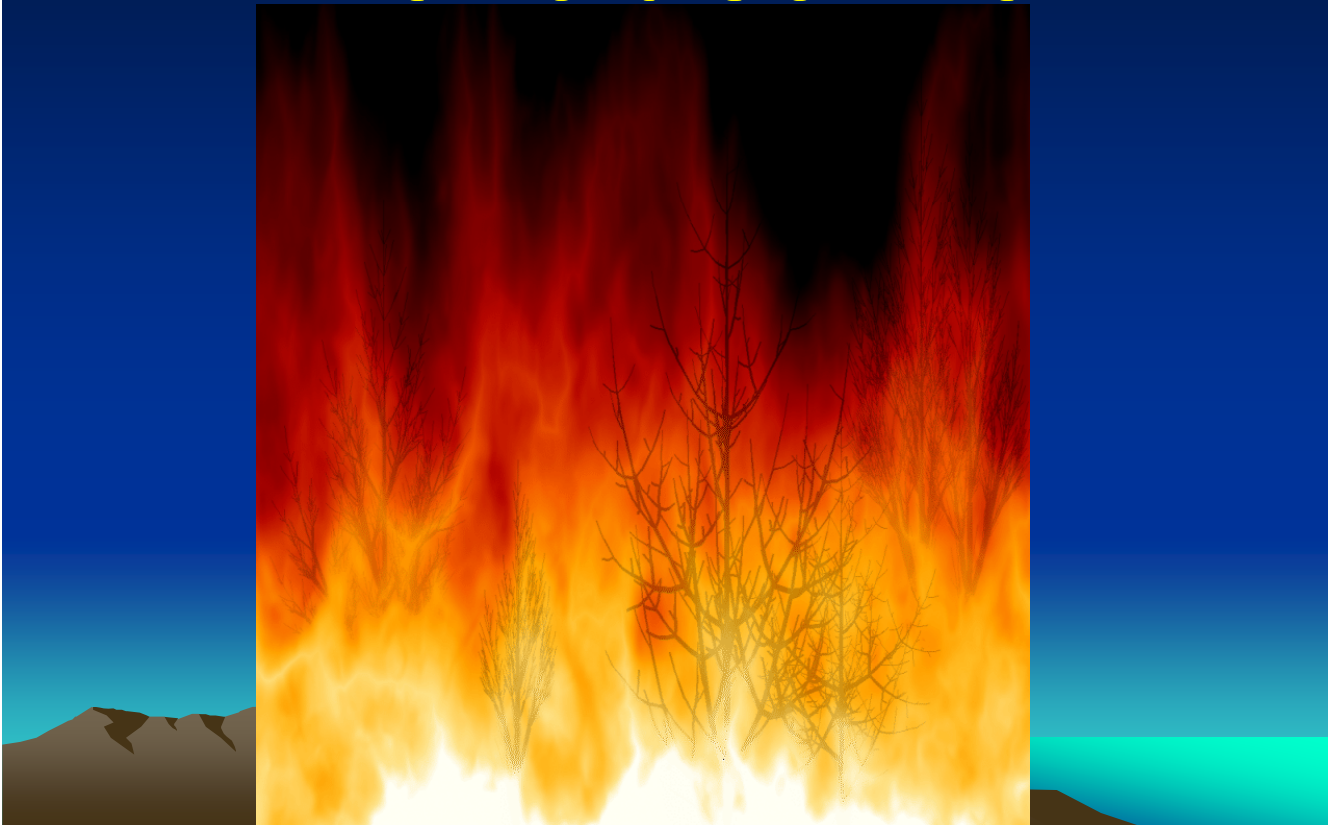
Slide 9

Source: Cohen et al, 2005

## Another Result: Congestion and Noise Have Become Major Urban Problems



# Another Result: The World is on Fire



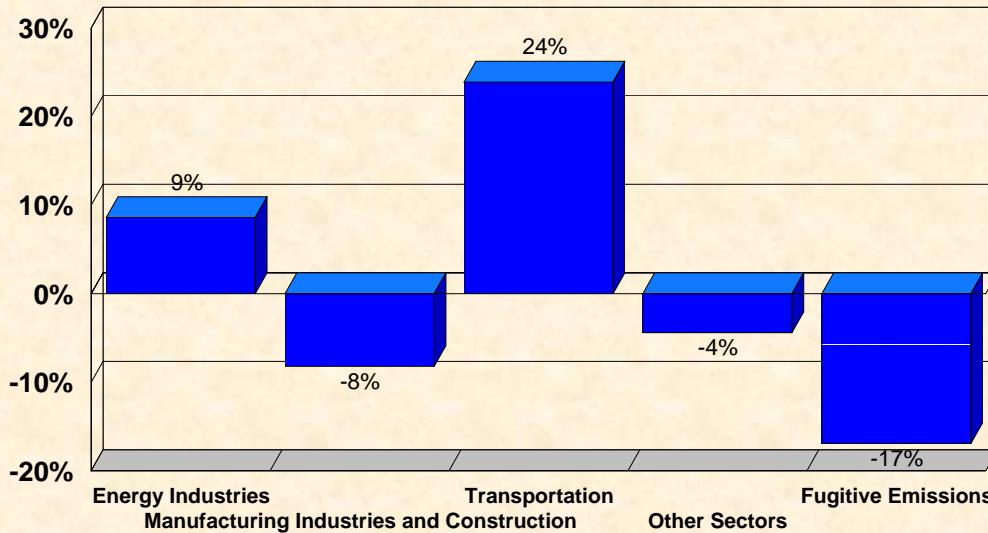
## Rongbuk Glacier



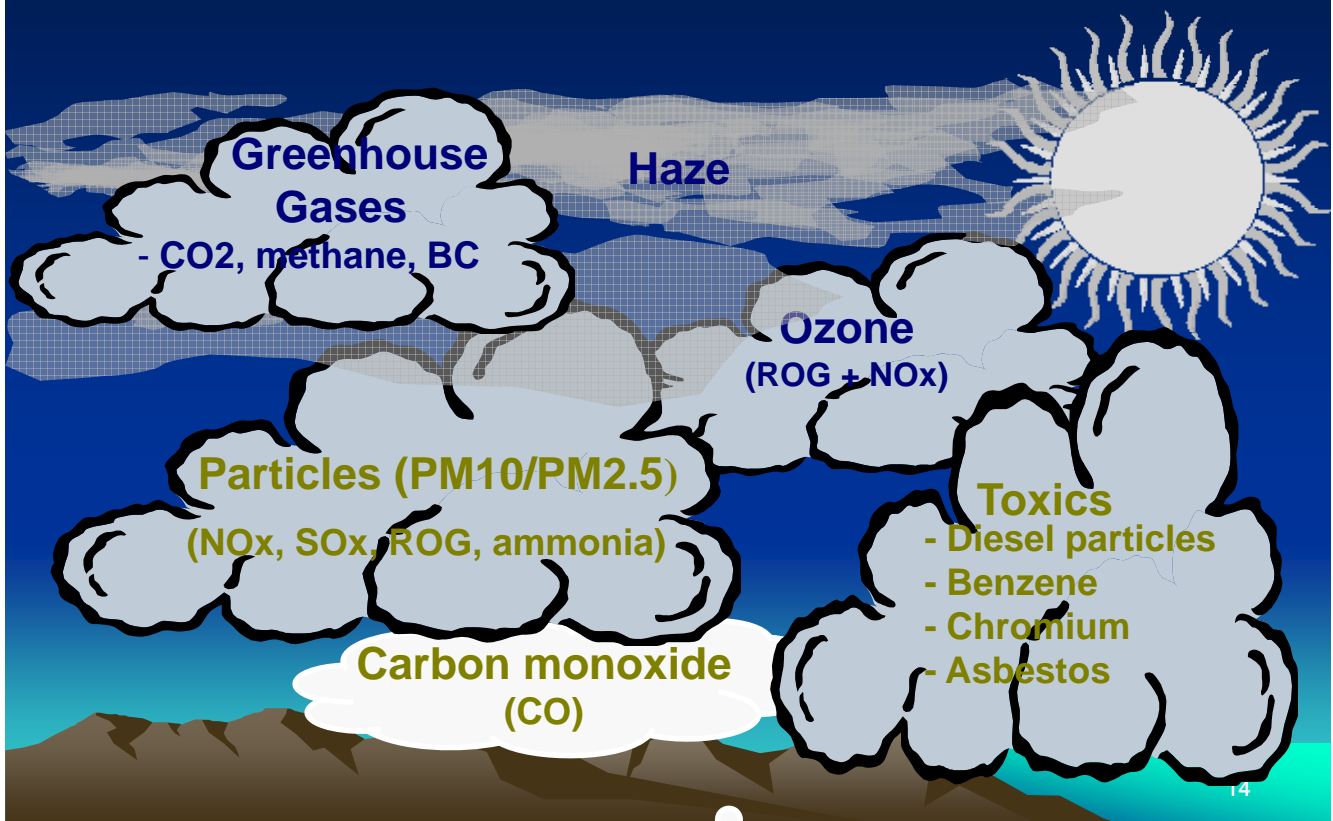
Rongbuk glacier in 1968 (top) and 2007. The largest glacier on Mount Everest's northern slopes feeds Rongbuk River.

# Annex 1 Party Greenhouse Gas Emissions in the Energy Sector

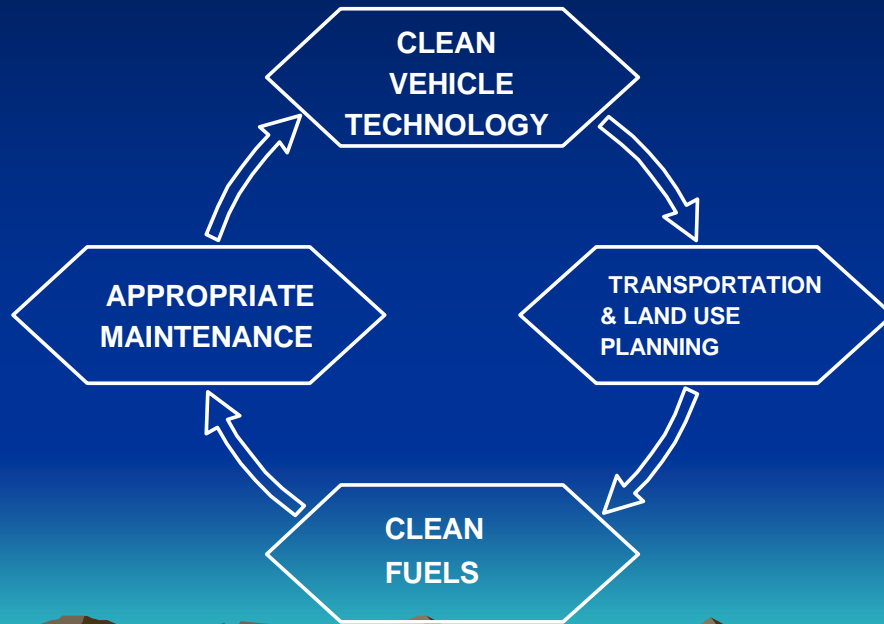
Change 1990-2004 (%)



## What Pollutants Are Of Concern?



## ELEMENTS OF A COMPREHENSIVE VEHICLE POLLUTION CONTROL STRATEGY



## Bellagio Principles

- **Design Programs & Policies That Reduce Conventional, Toxic, Noise and Greenhouse Emissions in Parallel**
- Treat Vehicles and Fuels As A System
- New Vehicle Standards for Greenhouse Emissions & Conventional Pollutants Should Be Fuel Neutral
- Expect & Require Best Technologies and Fuels Worldwide – in Both Industrialized and Developing Countries



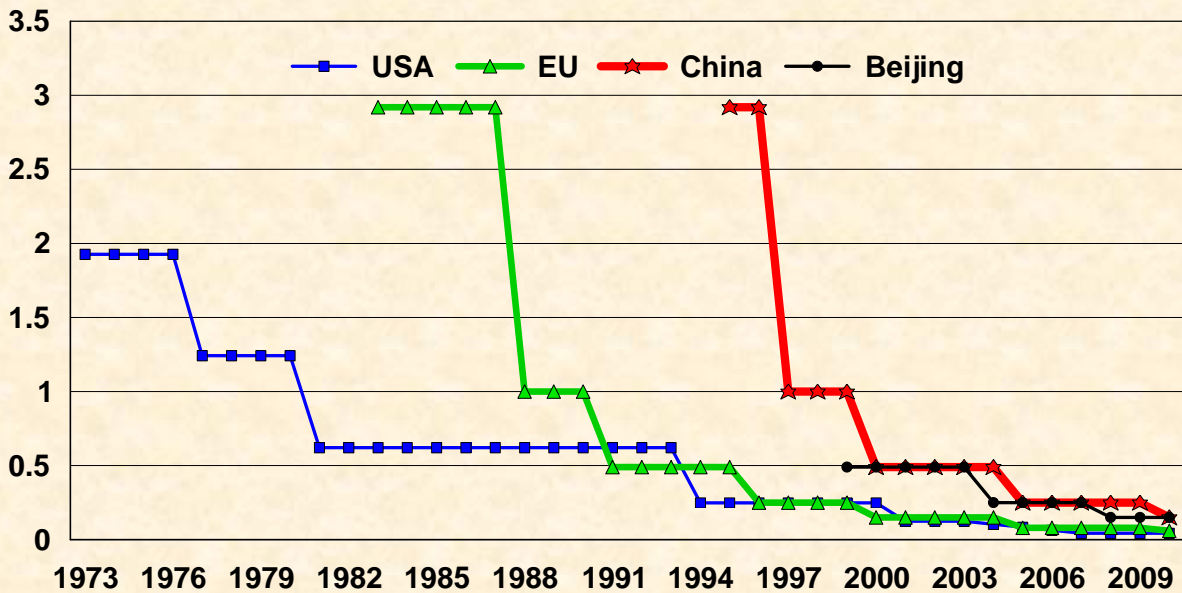
[WWW.THEICCT.ORG](http://WWW.THEICCT.ORG)



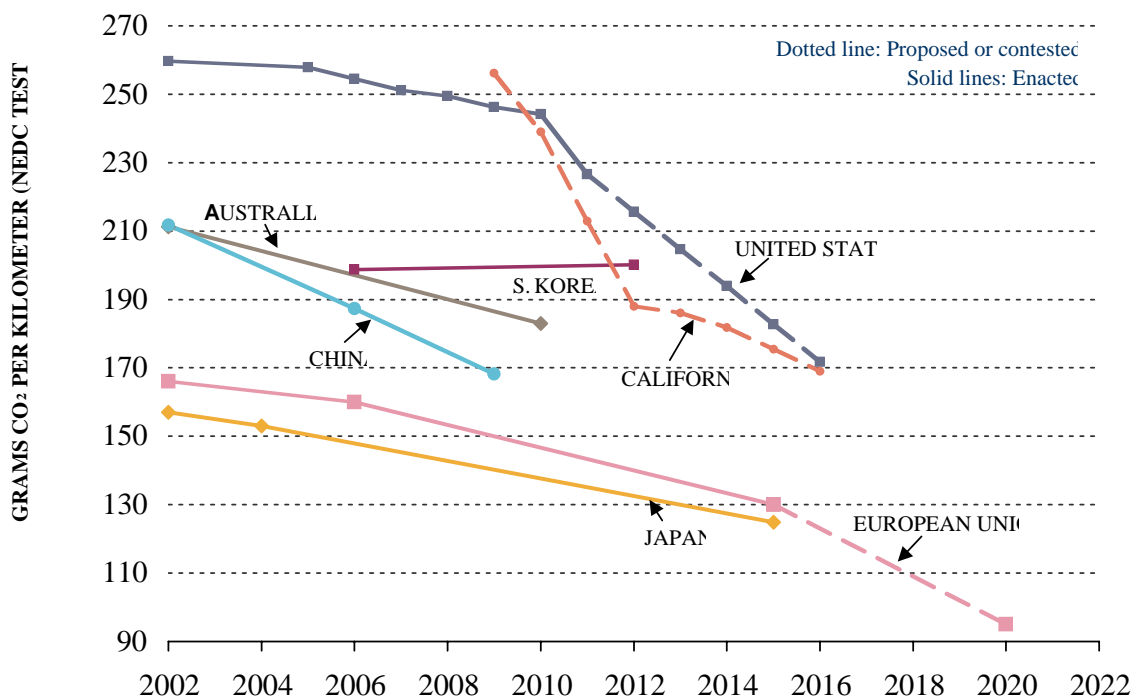
# Trends in Passenger Car Exhaust Emissions Standards

## NOx Emissions Standards

Grams/Kilometer

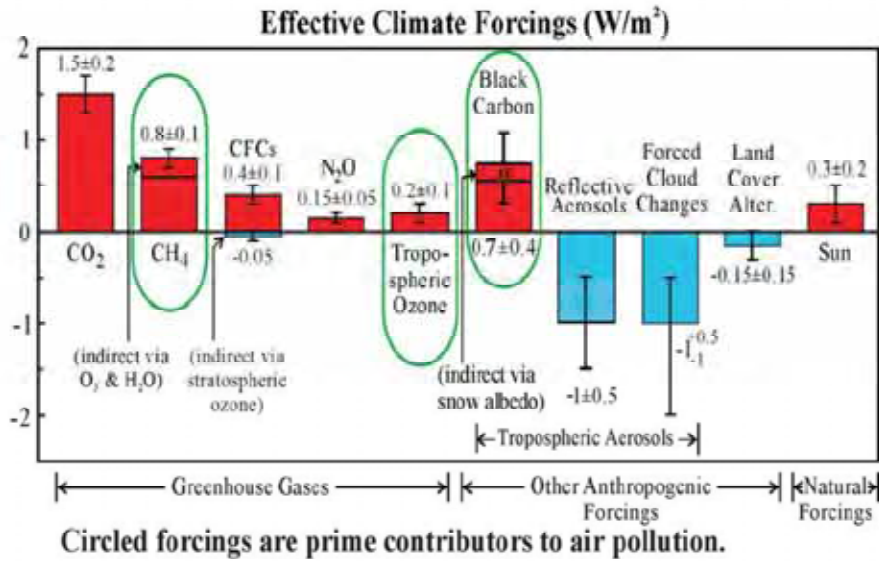


Actual and Projected GHG Emissions for New Passenger Vehicles by Country/Region, 2002-2022



Source: Passenger Vehicle Greenhouse Gas and Fuel Economy Standards: A Global Update, ICCT. May 2009 update.

## Carbon Dioxide is Not The Whole Story!

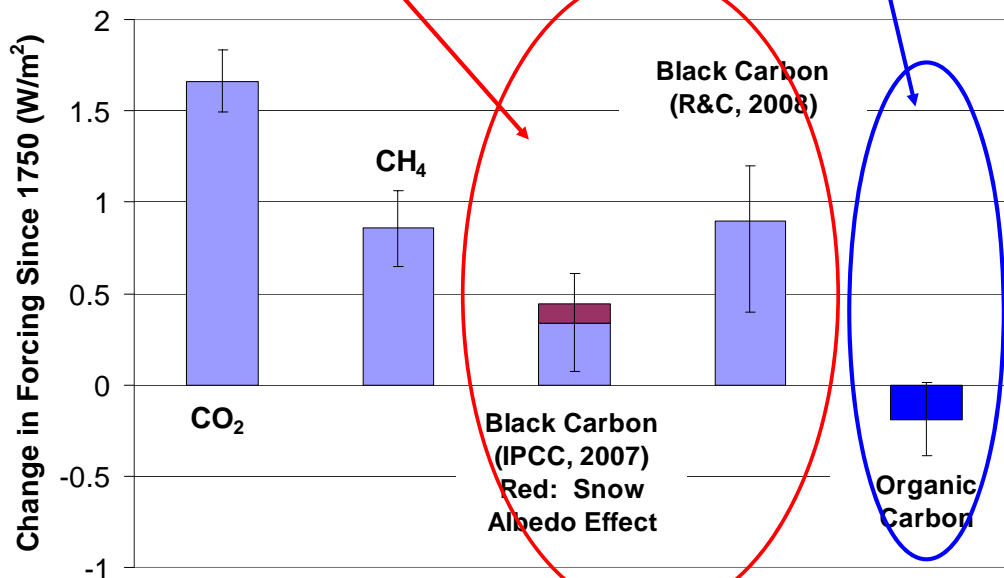


## BC has a Significant Impact on Global Warming

Direct BC warming is large at the global (and regional) scale

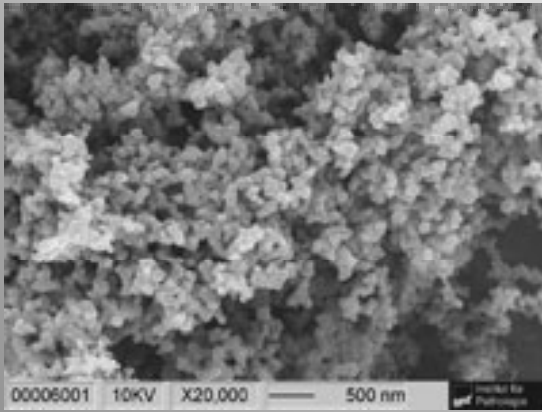
Co-emissions of organic carbon and/or other particles may partially offset BC warming

BC deposition on snow has a strong warming effect



## Relative Albedo

Measured from 0.00 (dark) to 1.00 (bright)



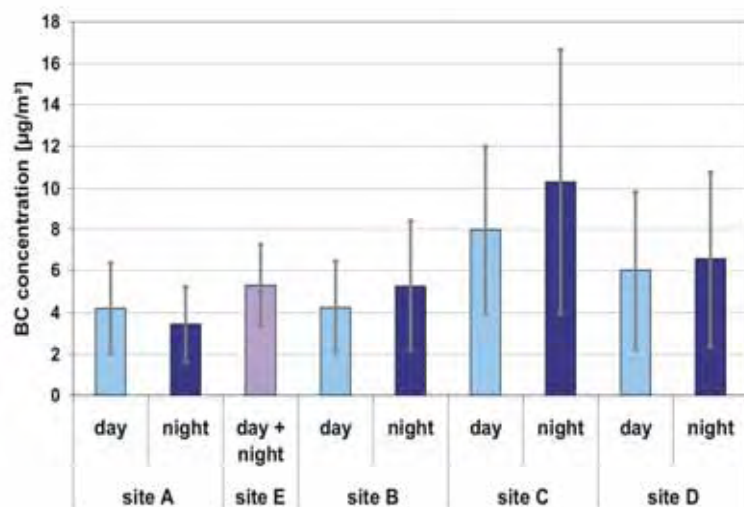
Black Carbon = 0.04



Fresh Snow = 0.9

## Average BC concentrations for site A to D for the sampling period from August 2005 to August 2007.

- For the majority of the sampled weeks, **night samples showed higher BC concentrations than day samples**. This observation could be explained by the regulation, that lorries are only allowed to drive during night time in most parts of Beijing.



# Modern Diesel?



23

## Why Design Policies That Reduce Conventional, Toxic, Noise and Greenhouse Emissions in Parallel?

- Policies or strategies can produce greenhouse gas reductions **more rapidly** by pursuing co-benefits
- Single integrated actions are **more likely to succeed** than multiple actions
- Non-climate benefits will **engage developing nations** potentially responsible for the majority of future emissions growth
- Low carbon transport in Asia will depend upon the extent which policymakers adopt **a co-benefit approach....**

# But many challenges remain

- **Technical**
  - Climate and development trade-offs
  - Integrating co-benefits into policies
- **Financial**
  - Mobilize sufficient resources
  - Engaging key sectoral interests (vehicle manufacturers)
- **Institutional**
  - Incentivize adoption of multi-benefit policies
  - Capacity to implement policies

## Sections in the Book: To Address These Challenges

### 1) Analytical Frameworks

- To identify transport policies that can maximize climate and developmental co-benefits in developing Asia.

### 2) Case Studies

- To assess and help overcome barriers to realizing climate and developmental co-benefits in developing Asia.

### 3) The Future Climate Regime

- To determine how the future climate change regime can support sustainable, low carbon transport in developing Asia.

### 4) The Way Forward

- To synthesize results and present key findings.

Thank You Very Much

