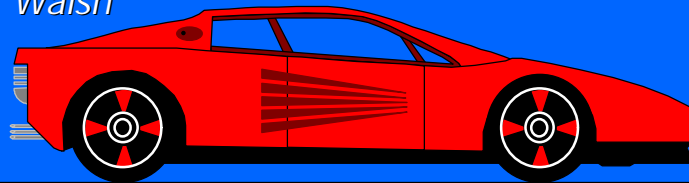


Motor Vehicle Pollution Control in Japan

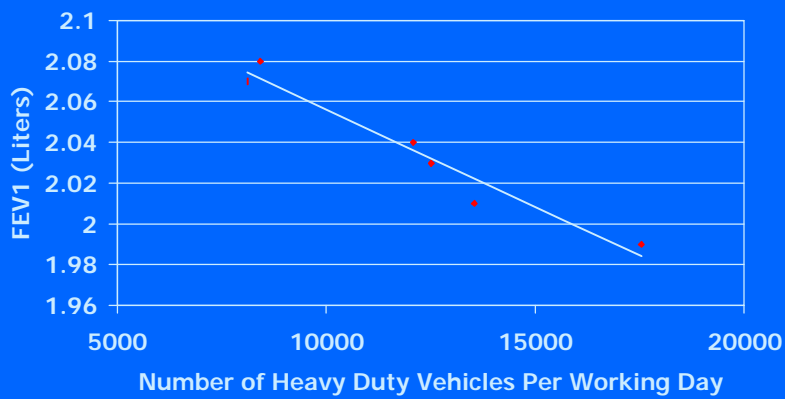
Michael P. Walsh



Outline

- Shift From NO_x to PM Focus
- Driving Forces
 - Emerging Health Information
 - Stagnant Air Quality
 - Court Pressure
- National Response
- Tokyo Response

Association Between Lung Function of Children Living < 300 Meters From Motorway and Intensity of Cargo Traffic



3

PM - The Epidemiology Studies

A Number of Epidemiology Studies

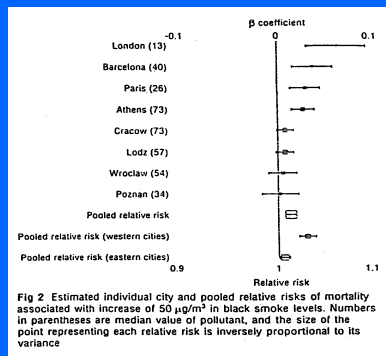
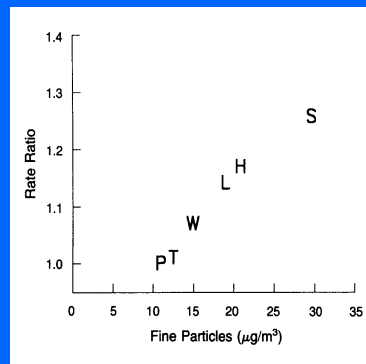


Fig 2 Estimated individual city and pooled relative risks of mortality associated with increase of 50 µg/m³ in black smoke levels. Numbers in parentheses are median value of pollutant, and the size of the point representing each relative risk is inversely proportional to its variance

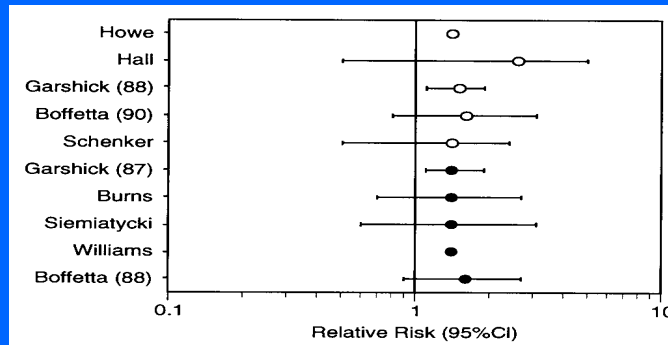


Europe Studies

Harvard 6 Cities Study

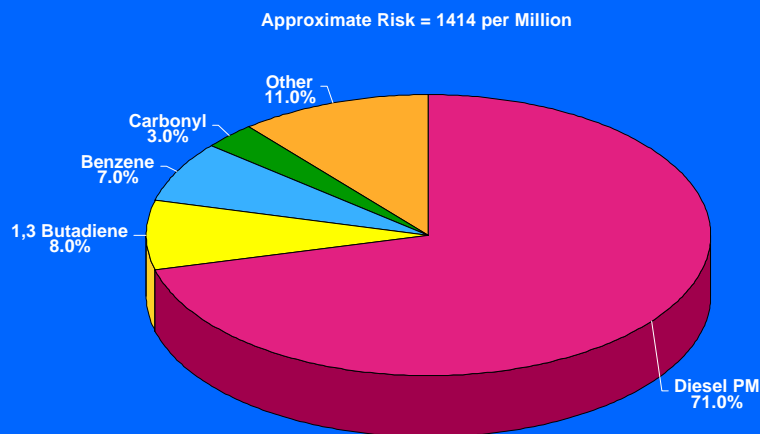
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Diesel Cancer Risk Studies in Railroad Workers



5

Average Los Angeles Basin Cancer Risk Apportionment



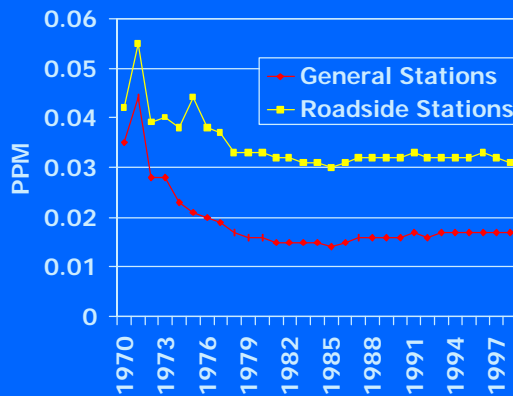
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Interim Report of Special Task Force on Diesel Health Effects (September 8, 2000)

Based on knowledge collected so far diesel exhaust particles are strongly suggested to be carcinogenic

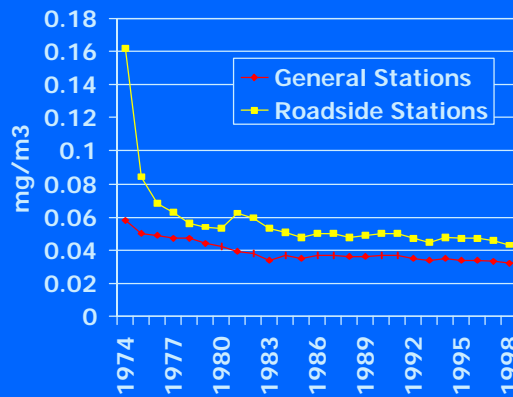
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Nitrogen Dioxide Air Quality Trends in Japan



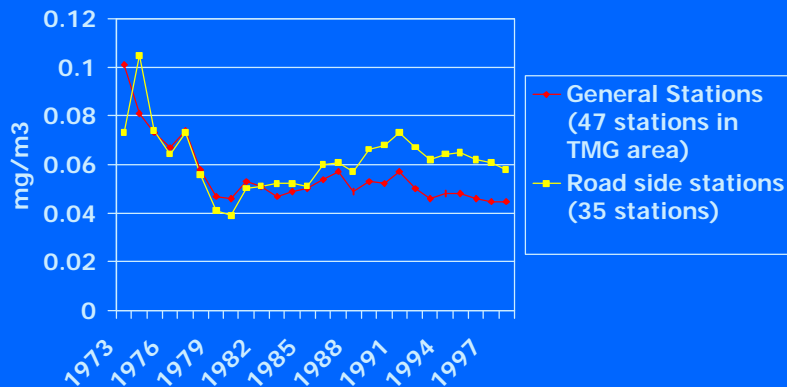
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Suspended Particulate Matter Air Quality Trends in Japan



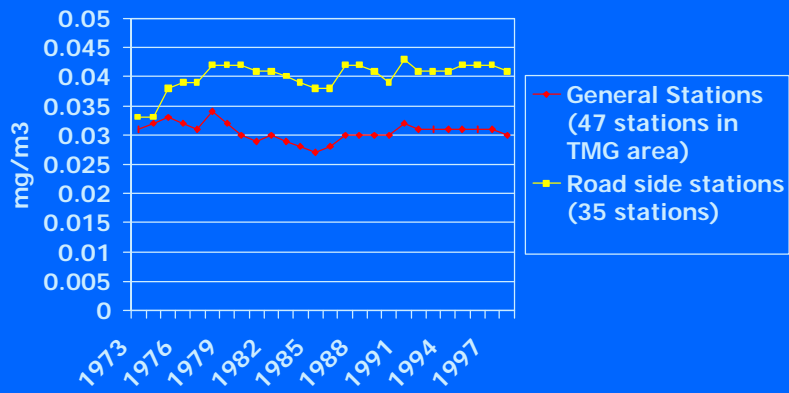
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Air Quality Trend in Tokyo (SPM)



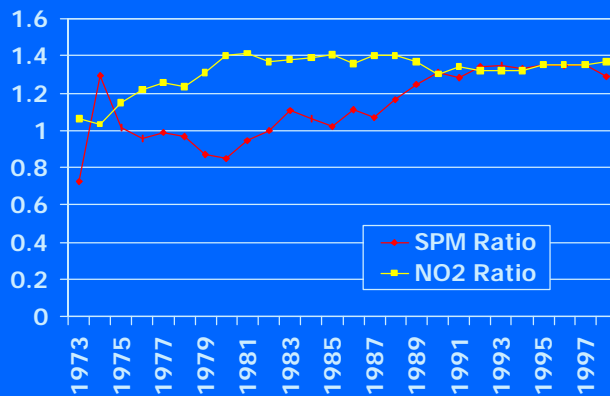
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Air Quality Trend in Tokyo (NO₂)



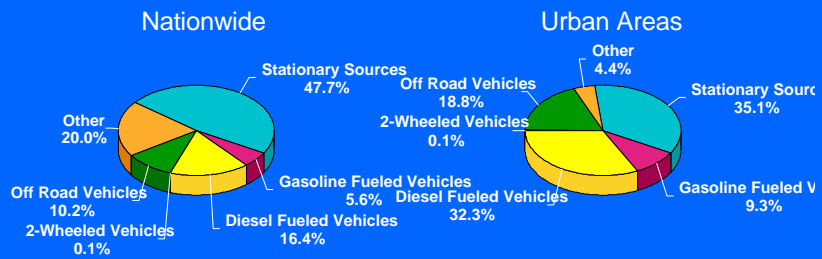
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Ratio of Air Quality Monitoring Levels in Tokyo (Roadside Vs. General)



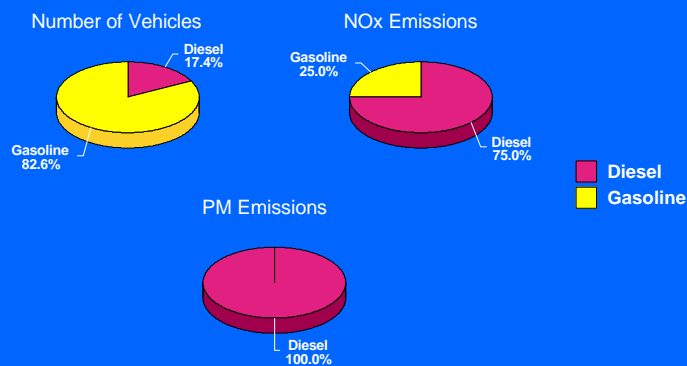
12

NOx Emissions From Various Sources in Japan (Tons/Year)



13

Emissions From Vehicles in Japan



Source: Interim Review
July 28, 2000

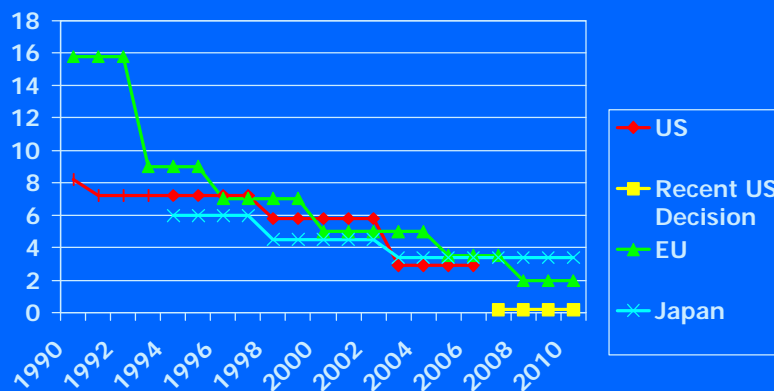
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Air Pollution Law Suits in Japan

- Osaka/Amagasaki
 - Agreed to Lower Diesel Traffic Volume
 - SPM Levels Maintained Below Fixed Level
 - 50 Plaintiffs Awarded 333 million Yen
- Nagoya – Under Appeal
- Tokyo – No Resolution Yet

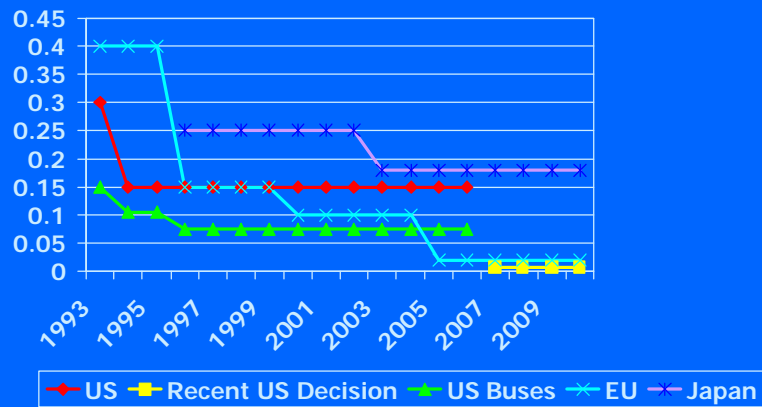
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Heavy Duty NOx Standards Around The World (g/kW-hr)



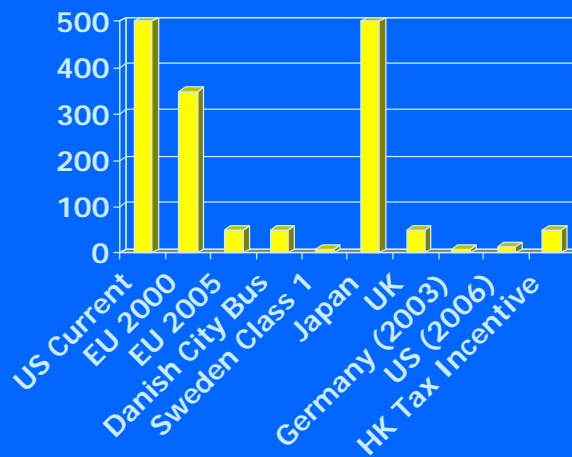
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Heavy Duty PM Standards Around The World (g/kW-hr)



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Diesel Fuel Sulfur Levels



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Future Policy for Motor Vehicle Exhaust Emission Reduction (Fourth Report) – November 1, 2000

- At Least Additional 50% Reduction in PM Emissions by 2005
- Maximum Level of Sulfur in Diesel Fuel Reduced to 50 PPM by End of 2004
- 40% Reduction in Smoke From Off Road Vehicles & Engines by 2003

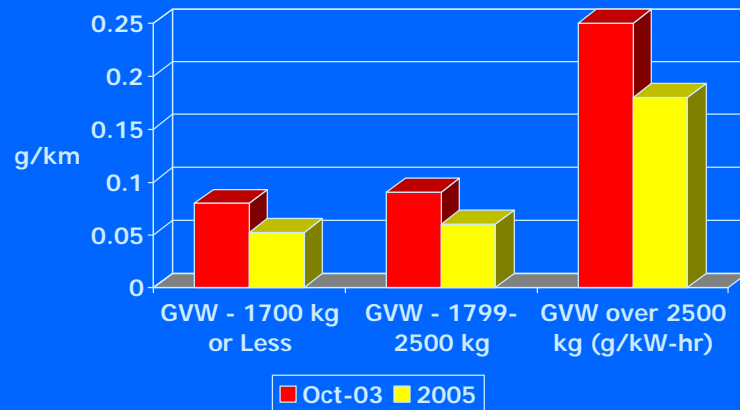
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Tokyo Municipal Government Announces “Diesel No” Program

- Ban on Sale & Use of Diesel Cars
- Tighter New Vehicle Standards Brought Forward
- Shift Tax Benefit Away From Diesel Fuel
- Stimulate Advances in Technology To Control Existing Diesels and Require its Use
- Diesel Commercial Vehicles Replaced By Gasoline Where Possible

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Tokyo Metropolitan Government PM Emissions Standards



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Newly Adopted Tokyo Emissions Plan

- Prohibition Against Driving Diesel Vehicles Which Don't Meet Standards
 - Leave City, Retrofit with DPF, Alternative Fuel
- Require Companies with 30 or More Vehicles To Submit Environment Management Plan
 - Reducing Excessive Use
 - Substituting Lower Emission Vehicles

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Newly Adopted Tokyo Emissions Plan (Cont'd)

- Require Dealers To Inform Car Purchasers Regarding Environmental Performance of Vehicle
- Restrict Idling Engines
- Mandate at least 5% Low Emission Vehicles (e.g., CNG or LPG) For Companies with 200 or More Vehicles
- Prohibit High Sulfur Oil For On and Off Road Use

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Conclusions

- National Requirements
 - Low Sulfur by End of 2004
 - PM Filters Expected by 2005 For New Vehicles
- Tokyo Requirements
 - Retrofits By 2003
 - Some Mandatory Conversions to LEV (including CNG & LPG)

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<http://walshcarlines.com>

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