



Better air quality through cleaner fuels
and vehicles –
the Partnership for Clean Fuels and
Vehicles (PCFV)





Overview

- Why? The challenge of air pollution
- What is the Partnership for Clean Fuels and Vehicles?
- What have been its successes?
- How has the Partnership operated?
- What have we learned from this partnership?
- What are the next steps?

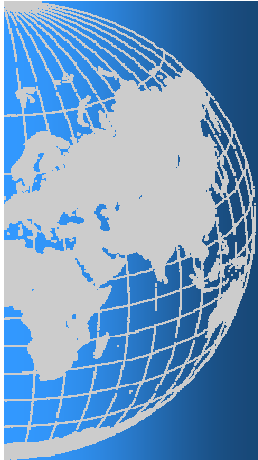




Why? The challenge of urban air pollution

- WHO: air pollution causes 2 million premature deaths worldwide per year
 - More than half in the developing world
- Transport sector: key contributor to urban air pollution and CO₂ emissions
- Air pollution affects poor people and children





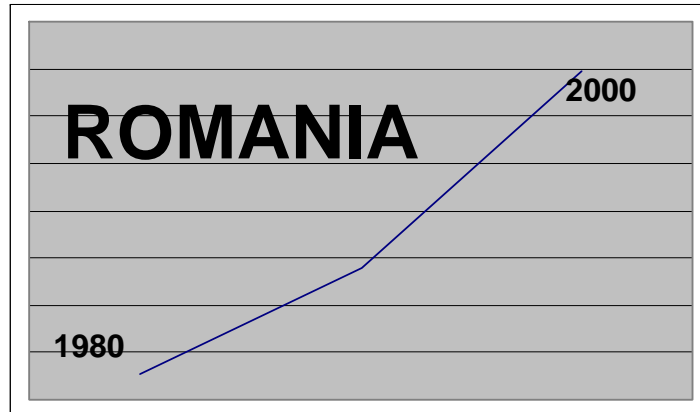
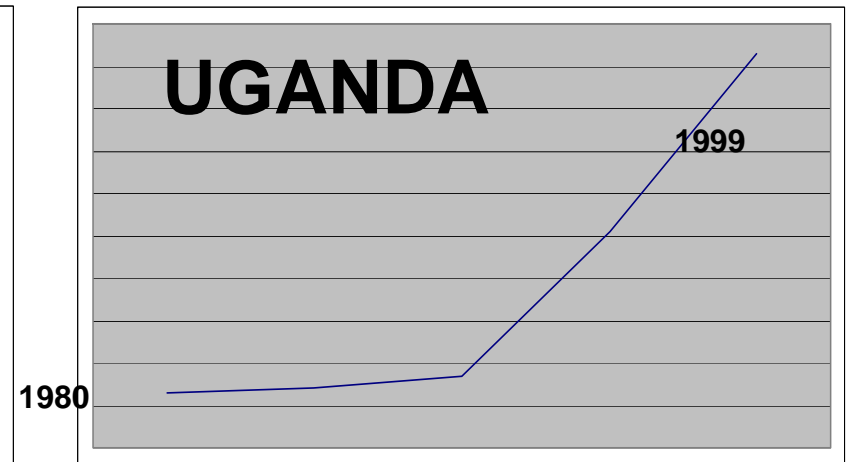
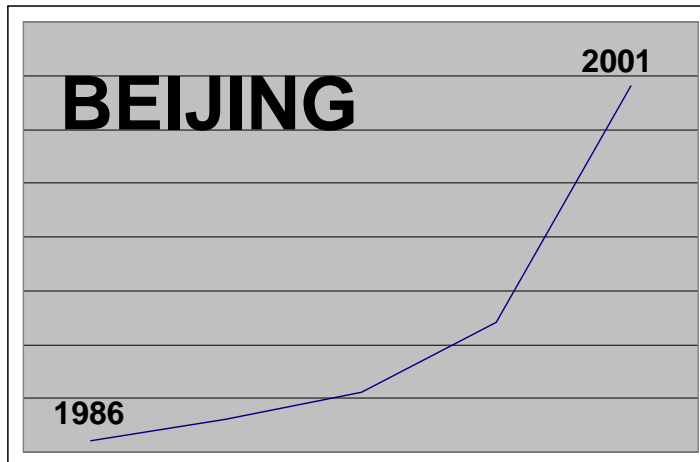
Partnership for Clean Fuels and Vehicles (PCFV)

- Launched at the World Summit on Sustainable Development, Sept 2002
- Public – private partnership
- Goals: Promote clean fuels and vehicles for better urban air quality:
 - the elimination of **lead** in gasoline;
 - and the phase down of **sulfur** in diesel and gasoline fuels, concurrent with
 - the adoption of **cleaner vehicle technologies**





Challenge: Vehicle Growth

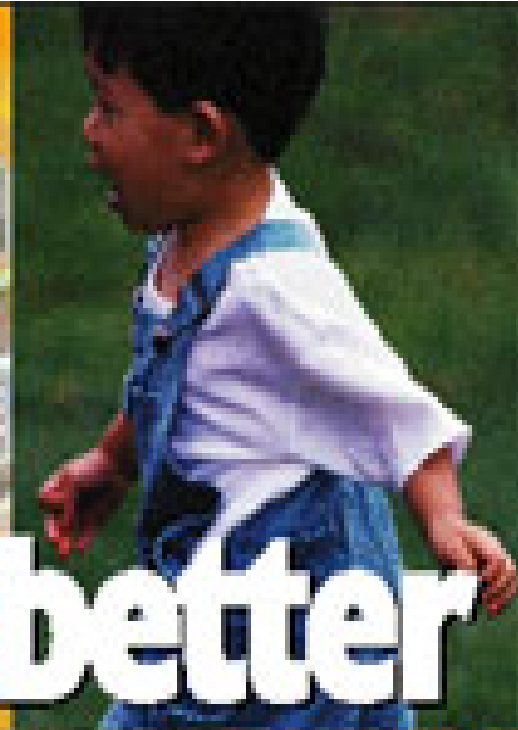


Beijing: from 1 car per 1000 persons to 45 cars per 1000 persons (1986-2001)

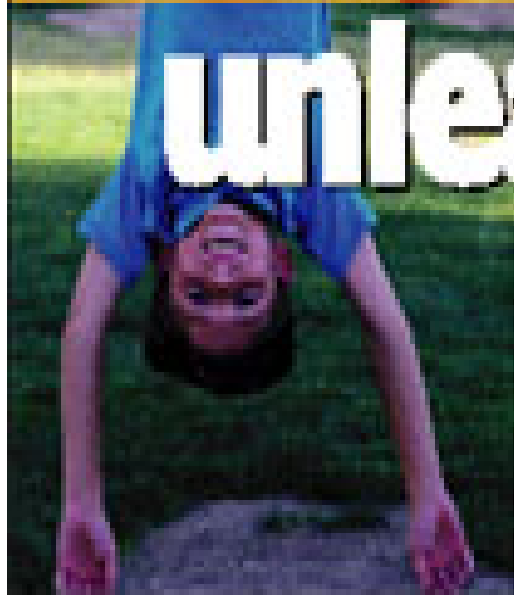
Romania: from 11 cars per 1000 persons to 139 cars per 1000 persons (1980-2000)

Uganda: from 25,000 cars to almost 190,000 cars in less than 20 years (1980-1999)





Runs better



unleaded



For more information on preventing lead poisoning
call 1-800-434-LEAD or visit www.epa.gov/lead.





Who is involved in the PCFV ?

- UNEP acts as the “Clearinghouse” for the Partnership
- Private sector: oil, auto, and emissions control industry
- Governments: local and national
- NGOs: international and local
- International organizations





PCFV Lead Campaign

- **Goal:** Unleaded gasoline world-wide by 2008
- Progress since 2002:
 - Sub-Saharan Africa: totally lead-free
 - 2 years and 21 countries left
- Impact on air quality:
 - Lead emissions greatly reduced
 - Enables catalytic converters





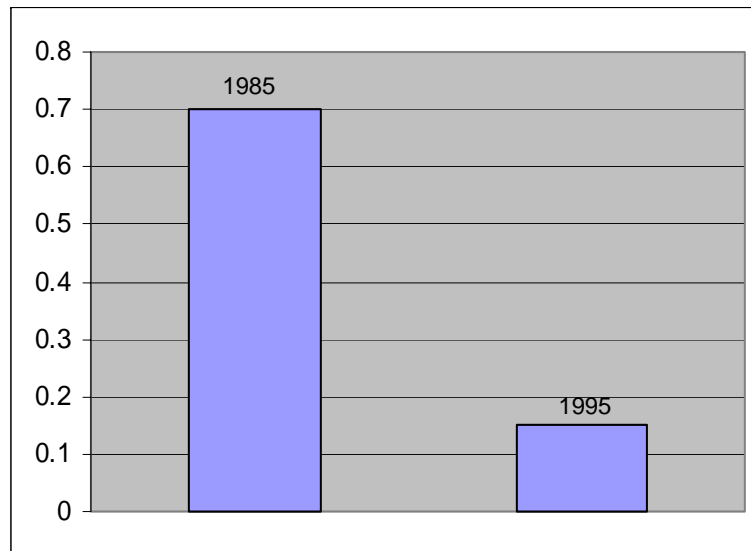
Hungary: declining blood lead levels after leaded petrol phase out (1985 – 2000)

Lead levels in petrol in Hungary:

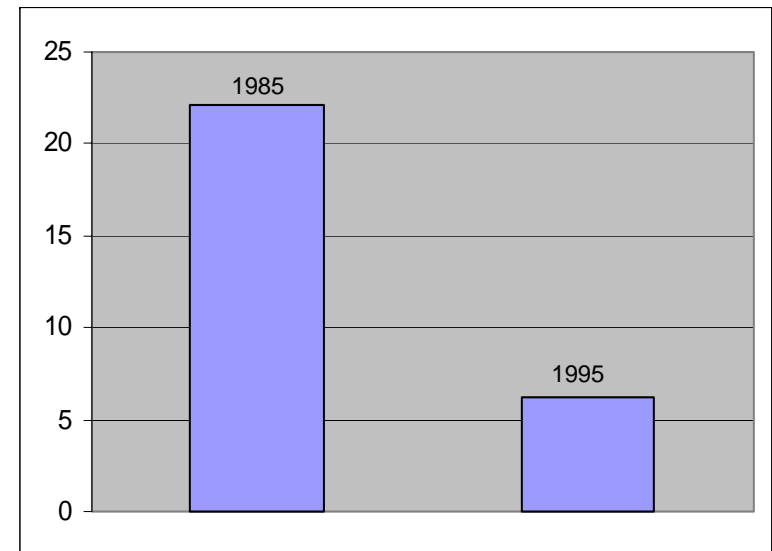
1985: 0.7 grams/ liter

1995: 0.15 grams per liter

Lead contents in gasoline (g/l)



Blood Lead Level ($\mu\text{g}/\text{dl}$)

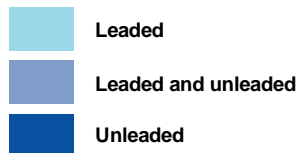
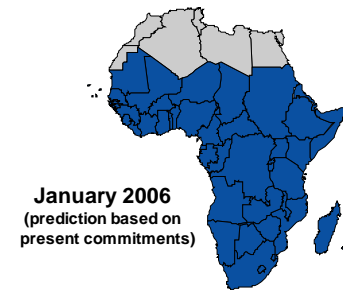
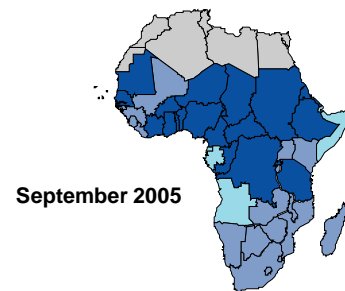
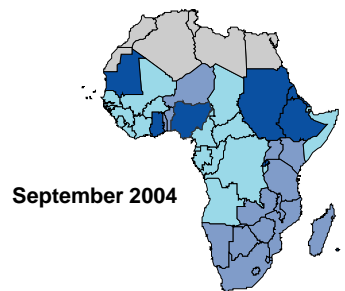
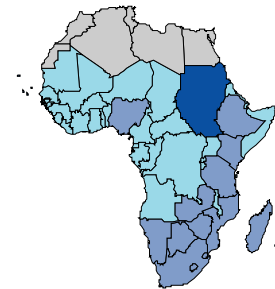
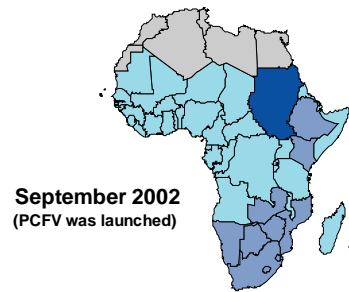
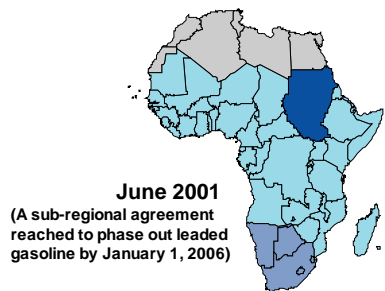




Progress on Lead Phase Out in Sub-Saharan Africa



Progress of leaded petrol phase out in sub-Saharan Africa



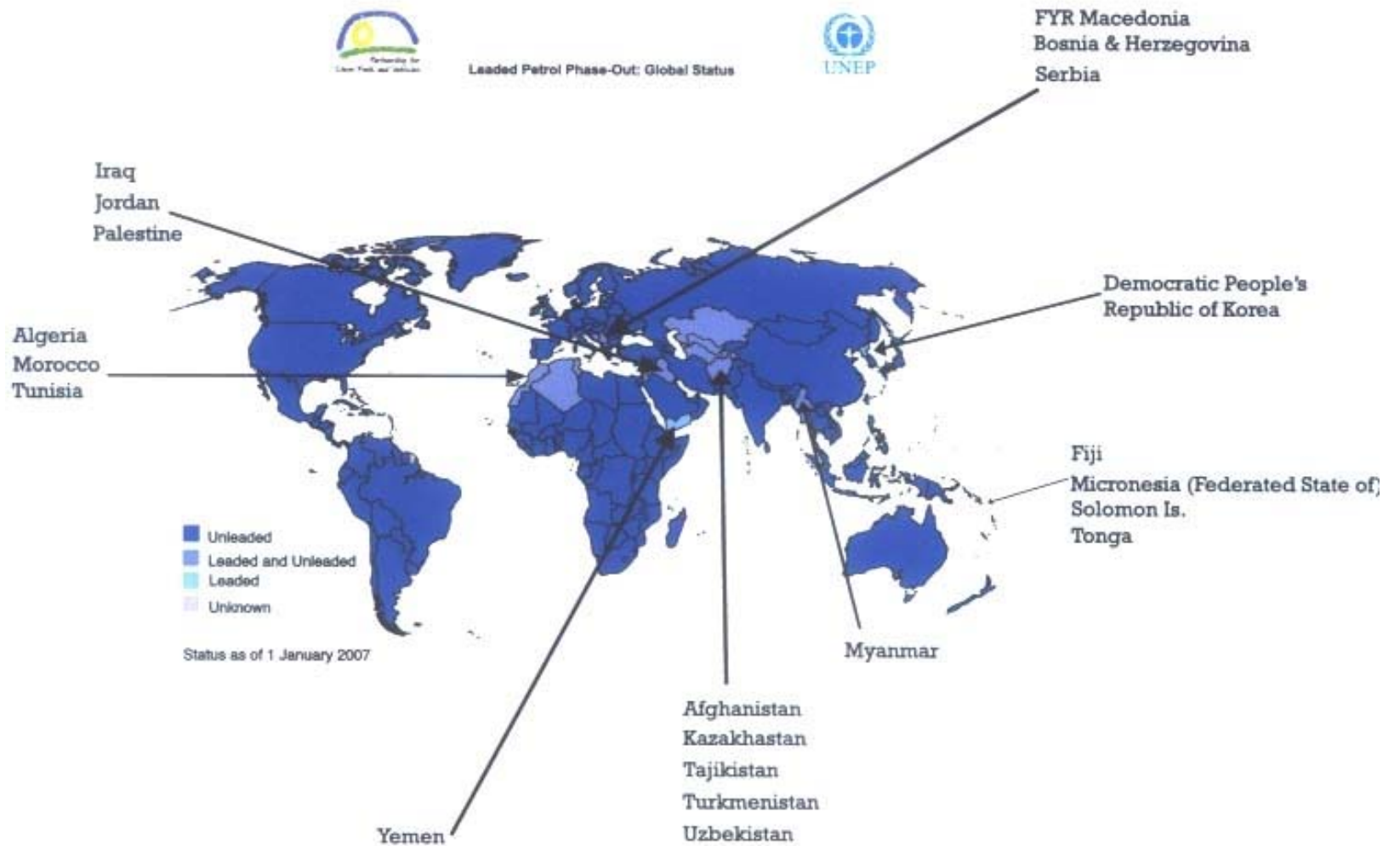
December 2006 the UN Secretary General awarded the UN21 Award to the PCFV for its successful campaign to phase out leaded petrol from SS Africa



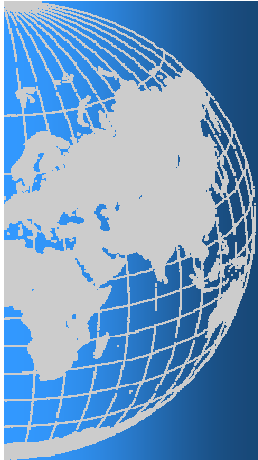
UNEP



Countries Still Using Leaded Petrol - 2007



UNEP



PCFV Sulfur Campaign

- **Goal:** 50 ppm sulfur (or less) in diesel and gasoline fuel worldwide
 - Time frames and roadmaps to be established at regional & national level
 - Hand in hand with vehicle technology
- **Impact on Air Quality:**
 - Sulfur in fuel is directly related to particulate emissions
 - Sulfur in fuels poisons advanced emission control technology





Sulfur, Air Pollution & Health Effects

- Particulates from diesel vehicles have very adverse health impacts:
 - Very small “ultrafines” that get into the lung easier
 - linked to higher incidence of cancer
- Data from Hong Kong show a drop in deaths after sulfur in fuel was reduced.
- The decrease in deaths was for all causes, but was most pronounced for cardiovascular and respiratory disease

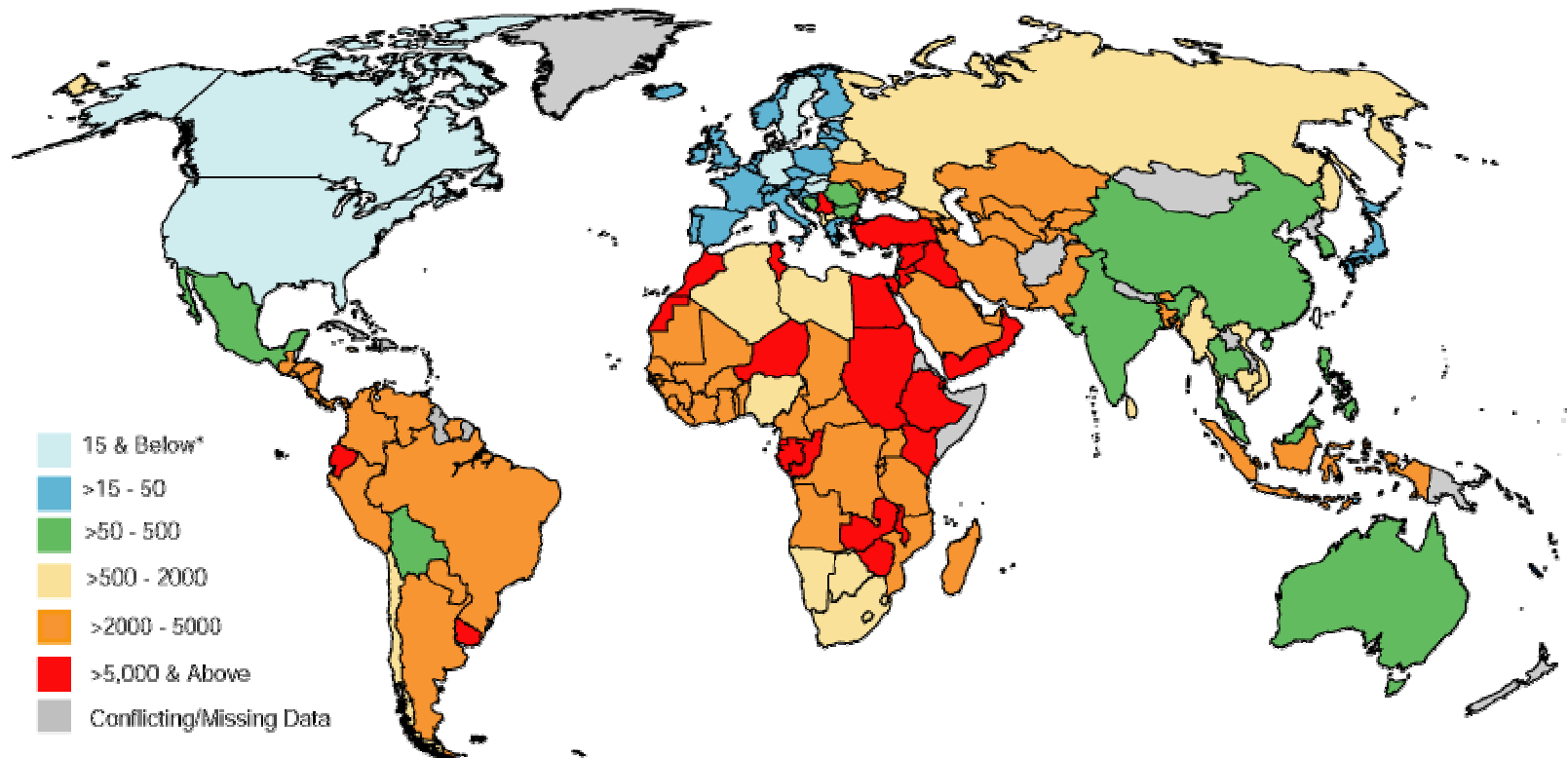




Sulphur Levels (Oct 2006)



Diesel Fuel Sulphur Levels: Global Status



* Information in parts per million (ppm)

Sulphur levels are maximum allowable as of October 2006. For additional details and comments per country, visit www.unep.org/pcfvl.





Cleaner Vehicles

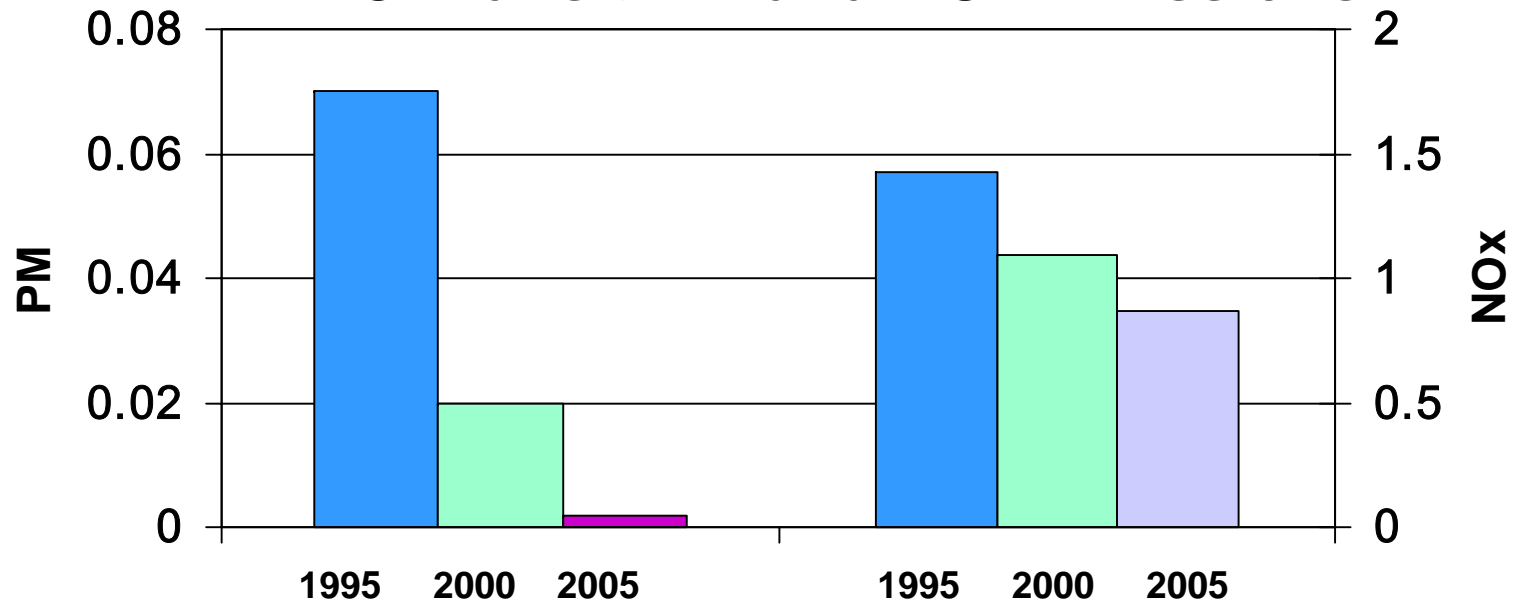
- The Partnership has adopted the “systems approach”
 - Advanced vehicle technology requires very clean fuels
- **Gasoline** vehicle technology:
 - Catalytic converters reduce NO_x, CO, and HC
- **Diesel** vehicle technologies
 - Diesel oxidation catalysts: 20-30% reduction in PM
 - Diesel particulate filters: >90% reduction in PM (with ultra-low sulfur diesel fuel)





NY city bus project

NYC Transit PM and NOx Emissions



1995: 500 ppm, no DOC

2000: 500 ppm, DOC, approx. 1000 new vehicles

2005: 30 ppm, DPFs, 3200 new vehicles



UNEP



Organization and Structure

- 90+ partners
- Clearinghouse at UNEP in Nairobi
- Advisory Group: subset of partners
- Governance rules
- Annual global partnership meeting





7 Key Lessons

1. Set clear, achievable, and measurable targets
2. Bring in all key stakeholders
3. Get political buy-in/mandate at a high level
4. But...involve local players
5. Develop governance rules and partnership structure as soon as possible
6. Communicate, communicate, communicate...
7. Designate a focal point to coordinate partnership activities





Partnership Challenges

- Setting goals over which we have little control
- Coordinating diverse stakeholders, with diverse viewpoints
- Keeping focused
- Diversifying funding sources
- Maintaining momentum
- Keeping partners interested and engaged





PCFV: Next Steps

- **Lead:** sub-regional and national support to reach 2008 target
 - Challenges in Central Asia, North Africa, Middle East and selected countries
- **Sulfur:** support development of regional and national action plans
 - Challenges in developing regional roadmaps (Africa, South America done) followed by national follow-up
- **Vehicles:** catalytic converter campaign, retrofit heavy diesels, fleet management
 - Challenges: first need cleaner fuels, many opportunities for emissions reductions



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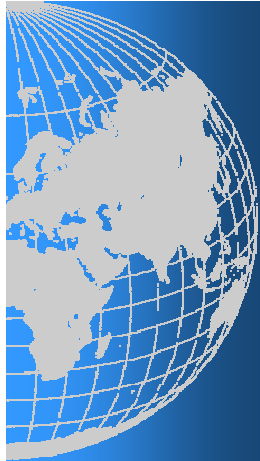


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CAAPRE

THE END



Thank You!

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www.unep.org/PCFV

