



International Union of Air Pollution Prevention and  
Environmental Protection Association in association with the  
Integrated Program on Urban, Regional and Global Air Pollution



## **REDUCING THE IMPACT OF VEHICLES ON AIR AND ENVIRONMENT QUALITY IN CITIES**

**Mexico City, January 22 – 23<sup>rd</sup> 2004.**

An international seminar for invited participants to review the effectiveness of alternative policy instruments for tackling air pollution in major and mega-cities, drawing in particular on recent work led by Professors Mario and Luisa Molina in Mexico City.

### **Objectives**

In most cities, at whatever stage of economic and population growth, road transport is now the major and most rapidly increasing source of air quality problems.

There are a wide range of alternative technological and policy instruments for addressing the problems, and accumulating evidence of their relative impacts in different cultural and economic circumstances. There has been less progress, however, in developing tools for identifying and assessing which combinations of measures (technical, regulatory and economic) are most likely to be effective in different circumstances, and in developing systems approaches which can integrate transport, environmental and land use policies, to deliver long-term change – both in air pollution and related aspects of environmental quality.

A key aim of the coming 13<sup>th</sup> World Clean Air and Environmental Protection Congress will be to address this issue. Using as its baseline the major study by Professors Mario and Luisa Molina in Mexico City this preparatory seminar aims to review the international evidence and prepare guidance and conclusions for wider debate in the World Congress.

**Sponsored by the National Society of Clean Air and Environmental Protection (UK), and Comitato di Studio per L'Inquinamento Atmosferico (Italy)**



## **OUTLINE PROGRAMME**

### **Session 1**

This Introductory Session will have three main elements:

- Presentation by Professors Mario and Luisa Molina of the principal conclusions and implications from their current programme in Mexico City, concerning transport measures for abating air pollution in mega-cities.

***Speaker: Mario Molina***

- Comparative perspectives drawing on experience from other cities, including:  
**Santiago, Sao Paulo and Bogotá**
- Preliminary discussion, focusing in particular on the relative importance of technical measures, planning policy changes and economic signals and incentives, including contributions from:

- ***Dr. Jayantha Liyanage (Sri Lanka)***
- ***Congressman Nereus Acosta (Philippines)***
- ***Anumita Roychowdhury (Delhi)***
- ***Dr. Menno Keuken (Netherlands)***
- ***Dr. Ivo Allegrini and Dr. Francesca Constabile (Italy)***
- ***Prof. Alan Gertler (United States of America)***



## **Session 2**

### **Cleaning Up Vehicles and Educating Drivers**

Dramatic reductions can be achieved in tail pipe emissions by cleaner conventional or alternative fuels; improvements in vehicle technology; vehicle inspection, maintenance and scrappage programmes; and measures to encourage better driving. But progress can be largely offset by rising vehicle numbers, which in turn bring the wider environmental problems associated with congestion.

This session will aim to clarify:

- How far there is consensus on the relative cost-effectiveness of the different technological and fuel changes now available;
- How far any such consensus points to the feasibility of a general evaluation framework that could allow optimal planning programmes to be identified.
- How far such technical solutions can take us – and what would remain to be tackled through other changes, notably to planning and economic systems;
- How helpful can Intelligent Transportation Systems (ITS) technologies be in reducing congestion and emissions and improving the quality of service offered by public transportation?

### **Speakers**

***Lead Guest Contributor: Michael Walsh***

#### ***Perspectives on fuel and technology:***

- ***Mexico City (Molina Team Members)***
- ***Europe (Professor John Murlis, University College, London)***
- ***United States (Tim Belian (CRC), Tim Johnson (Corning), James Lents (University of California at Riverside), representatives from California Air Resources Board and US EPA)***

***Inspection and Maintenance: Robert Slott (MIT) and John Rogers***

***Effects of Speed and Driver Behaviour: Dr. Menno Keuken (Netherlands)***



## **Session 3**

### **Planning Constraints**

Developed and developing cities alike face a broadly similar dilemma:

More widely distributed settlement patterns (whether planned or unplanned) are increasing demand for private vehicle use, yet the new road construction required to accommodate it may simply induce further demand, while development of new mass transit system alternatives may be inhibited by very high investment costs and planning constraints.

There appear to be some cities where the planning system has allowed environmentally sustainable solutions to vehicle growth. But the more usual position in cities subject to rapid growth, such as Mexico City, is that the planning system may simply be too weak to respond to the pressures on it and allow effective planned intervention. At the same time in some more stable cities, as for instance in Europe, the complex and conservative character of the planning system can itself inhibit the changes required.

This session will explore:

- How far problems and potential responses are common across cities of contrasting stages of economic growth;
- how far and how quickly can changes in planning systems mitigate the damaging impacts of vehicle numbers;
- what institutional change strategies may be needed to achieve an integrated and systems-based approach.

### **Speakers**

***Experience in Mexico City – The Molina Team***

***Comparative Perspectives from Santiago, Sao Paulo and Bogotá***

***Air Quality Management and Planning Systems: Perspectives from Europe – Professors Longhurst (UK), Allegrini (Italy) and Fumarola (Italy)***

***Access controls and low emission zones – Göran Värmby (Sweden)***

***Perspectives in Planning and Pollution Control in Asian Cities – Dr. Jayantha Liyanage (Sri Lanka) and Congressman Nereus Acosta (Philippines)***

***Consensus Building – Lawrence Susskind (USA)***



## **Session 4**

### **Managing Demand**

An alternative – or supplement – to use of the planning system may be use of economic signals and incentives: vehicle and driver taxes, congestion charging and more general road pricing. Prima facie they appear easier to implement and quicker in their impact. They may point the way forward for cities across the world, and may have some potential for success in Mexico City.

But there are some important questions:

- Will car use actually fall, given demand in inelasticity and, sometimes, absence of other transport modes;
- Vehicle taxes can be a blunt instrument. But, in the light of experience in London and elsewhere, can the alternatives – congestion charging and road pricing – be practical and effective;
- Could more traditional regulatory measures (radical parking controls, low emission zones, no-driving days etc.) achieve similar ends as effectively?

This session will be devoted to review of these broad questions on the basis of experience in Mexico City and other cities.

### **Speakers:**

***Lead Guest Contributor: Sir Christopher Foster***

***Lessons from Congestion Charging in London – Dr. David Hutchinson (Greater London Authority)***

***Financial Instruments for influencing Transport Demand: Experience in Singapore - Wee-Hock Tan (Invited)***

## **Session 5**

### **Conclusions**

- Prospects for progress in developing integrated assessment and systems approaches.
- Consideration of conclusions and of the issues to be included in a report to the World Clean Air Congress and other bodies.