BAQ Workshop Format: Overview

<table>
<thead>
<tr>
<th>Time</th>
<th>6 December</th>
<th>7 December</th>
<th>8 December</th>
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<tbody>
<tr>
<td>9.00 - 10.45 am</td>
<td>Opening Session and Keynote Address</td>
<td>Poster Session (Posters on display on 7-8 December)</td>
<td>Sub-workshop Sessions</td>
</tr>
<tr>
<td>10.46 - 11.15 am</td>
<td>Coffee/Tea</td>
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<td>Coffee/Tea</td>
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<tr>
<td>11.16 - 13.00 pm</td>
<td>Air Quality Management in India</td>
<td>Prevention vs. Control of Air Pollution in Asia</td>
<td>Urban AQM and Transboundary Air Pollution in Asia</td>
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<tr>
<td>13.01 - 14.00 pm</td>
<td>Lunch</td>
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<tr>
<td>15.46 - 16.15 pm</td>
<td>Coffee/Tea</td>
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<tr>
<td>16.16 - 18.00 pm</td>
<td>Networking Session</td>
<td>Sub-workshop Sessions</td>
<td>Closing Session</td>
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<tr>
<td>7.00 pm onwards</td>
<td>Evening Social Event</td>
<td>Evening Social Event</td>
<td>Evening Social Event</td>
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BAQ Program: Plenary, Sub-plenary, & Sub-workshop Sessions
(as of 20 December 2004)

**Day One - 6 December 2004, Monday**

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>9.00 - 10.45 am</td>
<td>Opening Ceremony and Keynote Address</td>
<td>Chairperson: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines</td>
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<td></td>
<td><em>Inauguration &amp; Lamp Lighting</em></td>
<td>Shri Namo Narayan Meena, Minister of State, Ministry of Environment &amp; Forests, India</td>
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<td><em>Welcome Remarks</em></td>
<td>Supat Wangwongwatana, Chairperson, Clean Air Initiative for Asian Cities</td>
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<td><em>Opening Remarks</em></td>
<td>V. Rajagopalan, Chairman, Central Pollution Control Board, India</td>
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<td><em>Formal Inauguration of BAQ 2004</em></td>
<td>Jagdish Khattar, President, Society of Indian Automobile Manufacturers</td>
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<td><em>Implementation of BAQ 2003 Commitments for Viet Nam</em></td>
<td>Jan van Heeswijk, Director General, Regional and Sustainable Development Department, Asian Development Bank</td>
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<td><em>Keynote Speech</em></td>
<td>Michael Carter, Country Director (India), The World Bank</td>
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<td><em>Vote of Thanks</em></td>
<td>Prodipto Ghosh, Secretary, Ministry of Environment and Forests, India</td>
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<td></td>
<td>R K Vaish, Joint Secretary, Ministry of Environment and Forests, India</td>
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<tr>
<td>10.46 - 11.15 am</td>
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<td>11.16 - 13.00 pm</td>
<td>Air Quality Management in India</td>
<td>Chairpersons: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines and Prodipto Ghosh, Secretary, Ministry of Environment and Forests, India</td>
</tr>
<tr>
<td></td>
<td>This plenary session will present the status of air quality and air quality management in India. The session will review and discuss different approaches to improve air quality, including command and control and preventive measures such as land-use planning and travel demand management. The session will have a special focus on the reduction of air pollution from mobile sources and will review the contribution of natural gas as an alternative source of fuel.</td>
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## Better Air Quality 2004

**Jaypee Palace Hotel**  
Agra, India  
6-8 December 2004

The Better Air Quality 2004 Organizing Committee would like to thank the following companies for their support:

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<tr>
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<th>Gold</th>
<th>Silver</th>
<th>IOC</th>
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### Time

#### 13.01 - 14.00 pm

**Lunch Break**

### 14.01 - 15.45 pm

#### Sub-plenary Session 1: Air Quality Monitoring, Modeling, and Health Impacts of Air Pollution in India

**Chairperson:** Frank Murray, Professor, Murdoch University, Perth, Australia

This sub-plenary session will describe the health effects of air pollution in India and will announce a major new study in this area. It will take an in-depth look at air quality monitoring systems in India and will assess how air quality monitoring data are being utilized to develop source apportionment studies and establish emission trends. The national level presentations will be complemented by a presentation on Pune city, which offers a model for an integrated and scientific approach to air quality management planning.

**Diwan-e-khas I**

- **Adverse Health Effects of Air Pollution in India**
  - Jitendra Pande, Consultant Physician, Sitaram Bhartia Institute of Science and Research in Delhi; and Member of Public Health and Air Pollution Program International Oversight Committee

- **Experience of Air Pollution Control in Last two Decades in India**
  - B. Sengupta, Member Secretary, Central Pollution Control Board

- **Review and Results of Studies on Inventories and Source Apportionment**
  - Rakesh Kumar, Scientist & Head, National Environmental Engineering Research Institute, Mumbai

- **Integrated Air Quality Management at the City level: The Case of Pune**
  - Srinivas Bonala, Development Engineer (Traffic), Pune Municipal Corporation

### 14.01 - 15.45 pm

#### Sub-plenary Session 2: Indoor Air Pollution Management

**Chairperson:** Sameer Akbar, Senior Environmental Specialist, The World Bank

This sub-plenary session will present the effects of indoor air pollution on health in both a rural and urban setting. Experiences and policies for indoor air quality management from the two largest and most active countries in Asia; China and India will be presented. This will be followed by a panel discussion.

**Diwan-e-khas II**

- **Rural and Urban Exposure to Indoor Air Pollution**
  - Sumeet Saksena, Fellow, East-West Center

- **Experience and Policies for Indoor Air Pollution in India**
  - Sumi Mehta, Health Effects Institute

- **Sustainable Intervention Strategies for Reducing IAP Exposure in China Rural Areas**
  - Ning Tang, Professor, China Center for Disease Prevention and Control

- **Panel Discussion: Solutions to Control Indoor Air Pollution**
  - Sumeet Saksena, Fellow, East-West Center; G.K. Pandey, Advisor, Ministry of Environment and Forests; Ning Tang, Professor, China Center for Disease Prevention and Control; Aryanto Soedjarwo, Asia Regional Cookstove Program, Indonesia
The Better Air Quality 2004 Organizing Committee would like to thank the following companies for their support:

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Better Air Quality 2004
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6-8 December 2004

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Time | Subject | Speaker
--- | --- | ---
14.01 - 15.45 pm | Sub-plenary Session 3: AQM and Society’s Role in India | Sandeep Shrivastava, Counsellor, Environment Management Division, Confederation of Indian Industry
| | Chairperson: Winston Bowman, Regional Coordinator, United States - Asia Environment Partnership, USAID | Debi Goenka, Member Activist, Bombay Environmental Action Group
| | | Dilip Biswas, Former Chairman, Central Pollution Control Board

This sub-plenary session will review and discuss the roles of three main stakeholder groups – the private sector, civil society, and government – in managing air quality in India. The panel discussion that will conclude this session will discuss how improved coordination and cooperation between the three stakeholder groups can improve air quality governance in India. The discussion will include the potential contribution by development agencies in strengthening air quality governance.

Diwan-e-khas III

The Role of the Private Sector in Air Quality Monitoring and Air Quality Management in India
Sandeep Shrivastava, Counsellor, Environment Management Division, Confederation of Indian Industry

Civil Society Perspective on Air Quality Governance
Debi Goenka, Member Activist, Bombay Environmental Action Group

Impact of State Policies and Actions on Urban Air Quality
Dilip Biswas, Former Chairman, Central Pollution Control Board

Panel Discussion: ‘Does Air Quality Governance in India Work?’
Sandeep Shrivastava, Counsellor, Environment Management Division, Confederation of Indian Industry; Debi Goenka, Member Activist, Bombay Environmental Action Group; Dilip Biswas, former Chairman, Central Pollution Control Board

15.46 - 16.15 pm | Coffee/Tea |

16.16 - 18.00 pm | Country and Thematic Networking Session |

This session will be devoted to networking at the country and thematic level. In 15 country groups and 3 thematic groups, CAI-Asia members and other interested persons working on air quality management in Asia will discuss how to implement the recommendations from BAQ 2004 in their countries. The results of this session will be reported in the BAQ 2004 closing ceremony.

Country Groups
Bangladesh | Diwan-e-aam I
Bhutan | Movie theater
China, PR | Diwan-e-khas I
India | Diwan-e-khas II
Indonesia | Diwan-e-khas III
Malaysia | Meeting Room 3
Nepal | Pavilions Heights
Pakistan | Poolview Pavilion
Philippines | Meeting Room 2
Sri Lanka | Meeting Room 4
Thailand | Pavilion of China
Viet Nam | Summit Lounge

Thematic Groups
Clean Air Training Network (CATNet) Asia | Diwan-e-aam II
The International Society for Environmental Epidemiology, South Asia Regional Chapter | Meeting Room 1
**Better Air Quality 2004**
Jaypee Palace Hotel
Agra, India
6-8 December 2004

**Day Two - 7 December 2004. Tuesday**

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<tr>
<th>Time</th>
<th>Subject</th>
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<tr>
<td>9.00 - 10.45 am</td>
<td><strong>Poster Session</strong></td>
<td>Diwan-e-khas III</td>
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<td>About 100 to 120 posters will be presented in three thematic clusters. Posters will be up for additional viewing until 8 December.</td>
<td>Diwan-e-aam I</td>
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<td>Cluster 1: Health and Environmental Impacts of Air Pollution</td>
<td>Diwan-e-aam II</td>
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<td>Cluster 2: Reducing Emissions from Mobile Sources</td>
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<td>Cluster 3: Air Quality Monitoring and Management</td>
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<td>10.46 - 11.15 am</td>
<td><strong>Coffee/Tea</strong></td>
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<td>11.16 - 13.00 pm</td>
<td><strong>Prevention vs. Control of Air Pollution in Asia</strong></td>
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<td>Chairpersons: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines and Meryllin Zaw-Mon, Director Certification, United States Environmental Protection Agency</td>
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<td>This plenary session will review the potential of preventive approaches to reduce air pollution versus more traditional, command and control approaches. Relevant experiences from outside Asia will be presented. Considering the expected growth in motorization, the session will give special attention to preventing emissions from mobile sources of pollution. The importance of broad-based stakeholder engagement will be emphasized.</td>
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<td></td>
<td><strong>Command and Preventive Control Strategies for Improving Air Quality: Experience Around the Globe and Lessons for Asia</strong></td>
<td>Dan Greenbaum, Vice Chairman, Committee on Air Quality Management, National Academy of Science; President, Health Effects Institute</td>
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<td><strong>Non-Motorized Transport and Sustainable Mobility</strong></td>
<td>Walter Hook, Executive Director, Institute for Transportation and Development Policy</td>
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<td><strong>Planning the Energy Scenarios for Asia: How to Minimize Negative Air Quality Implications</strong></td>
<td>Lee Schipper, Director for Research EMBARQ on behalf of Lew Fulton, Transport Energy Specialist, International Energy Agency</td>
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<td><strong>The Need for Extensive Public Participation in Decision-making</strong></td>
<td>Jitendra Shah, Secretariat, Clean Air Initiative for Asian Cities; Lead Environmental Specialist, The World Bank</td>
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<tr>
<td>13.01 - 14.00 pm</td>
<td><strong>Lunch Break</strong></td>
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<tr>
<td>14.01 - 15.45 pm</td>
<td><strong>Sub-plenary Session 4: Management of In-use Vehicle Emissions in Asia</strong></td>
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<td>Chairperson: Kong Ha, Senior Environmental Protection Officer, Environment Transport Works Bureau, Hong Kong, SAR; Designate Chairperson, Clean Air Initiative for Asian Cities</td>
<td>Todd Johnson, Senior Environment Specialist, The World Bank</td>
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<td>This sub-plenary session will review existing and potential policies and measures to reduce emission from in-use vehicles in Asia. In addition to an overall framework, attention will be given to the importance of more effective inspection and maintenance systems in Asia and the potential for equipping gross polluting vehicles with advanced emission control devices. The session will conclude with an overview of two important regional initiatives to improve fuel quality in Asia.</td>
<td>Karl Hausker, Environmental Policy Consultant, United States of America; Tomiyuki Kudo, President, Japan Petroleum Energy Center; Cornie Huizenga, Head of CAI Asia Secretariat, Asian Development Bank; Tim Kasten, Chief, Policy Analysis, Development and Partnerships Branch, United Nations Environment Programme</td>
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<td><strong>Reducing Air Pollution from Urban Transport — Summary of the World Bank Study</strong></td>
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<td><strong>Vehicle Inspection and Maintenance Programs: International Experience and Best Practices</strong></td>
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<td><strong>Japan Petroleum Energy Center Activities for Clean Air</strong></td>
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<td><strong>CAI-Asia – Oil Industry Dialogue for Cleaner Fuels in Asia</strong></td>
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<td><strong>Partnership for Cleaner Fuels and Vehicles</strong></td>
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Better Air Quality 2004
Jaypee Palace Hotel
Agra, India
6-8 December 2004

Time | Subject | Speaker
--- | --- | ---
14.01 - 15.45 pm | Sub-plenary Session 5: Co-benefits of Climate Change Mitigation and Urban Air Quality Management | Kate Sibold, Program Manager, Integrated Environmental Strategies, United States Environmental Protection Agency

This sub-plenary session will explain how activities that improve urban air quality management and activities that prevent or reduce climate change can be mutually supportive. A theoretical framework will be provided, as well as specific examples of the possible co-benefits for the transport and industrial sectors and for Asian cities. Finally, information will be given on how the adoption of a co-benefits approach can lead to the use of innovative financing models for air quality management in Asia.

Diwan-e-khas II

Integrating Climate Co-benefits in Urban Air Quality Management: Opportunities Through the Global Environment Facility and the Clean Development Mechanism | Ajay Mathur, President, SenergyGlobal

Integrated Environmental Strategies: The Case of Metro Manila | Daniel McNamara, Director, Manila Observatory

Integrated Environmental Strategies: The Case of Hyderabad | N.S. Vatcha, Environment Protection Training and Research Institute, Hyderabad

Financial Analysis for Successful Integrated Environmental Strategies Project Implementation | Vaqar Zakaria, Managing Director, Hagler Bailly, Pakistan

14.01 - 15.45 pm | Sub-plenary Session 6: Sustainable Urban Transport in Asia | Choudhury Mohanty, Environment Coordinator, United Nations Center for Regional Development

This sub-plenary session will introduce a framework integrating environmental, social and economic-financial concerns that can be used by decision makers in Asia to strengthen the sustainability of urban transport systems. One presentation will introduce an indicator system that can be used to plan and implement a sustainable urban transport system. Two presentations dealing with improved bus transportation in Indonesia and India will highlight the importance of more effective public transport systems.

Diwan-e-khas III

Strategic Framework for Sustainable Urban Transport in Asia | Charles Melhuish, Lead Transport Specialist, Asian Development Bank

Indicators: Reliable Signposts on the Road to Sustainable Transportation — The Partnership for Sustainable Urban Transport in Asia | Lee Schipper, Director for Research, EMBARQ – Partnership for Sustainable Urban Transport in Asia Project

The Potential of Bus-Rapid Transit in Asia: Trans - Jakarta System | Taufik Adiwanjo, Head of Infrastructure Division, Badan Pengelola Transjakarta - Busway

The City’s Experience in Running a Sustainable Public Company and Lessons for Other Asian Cities | Upendra Tripathy, Managing Director, Bangalore Metropolitan Transport Corporation

10.46 - 11.15 am | Coffee/Tea |

16.16 - 18.00 pm | Sub-workshop Sessions |
Day Three - 8 December 2004, Wednesday

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Speaker</th>
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<tr>
<td>9.00 - 10.45 am</td>
<td><strong>Sub-workshop Sessions</strong></td>
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<td>Coffee/Tea</td>
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<tr>
<td>11.16 - 13.00 pm</td>
<td><strong>Urban Air Quality Management and Trans-boundary Air Pollution in Asia</strong></td>
<td>Chairpersons: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines</td>
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<td></td>
<td>This plenary session will assess how efforts made to reduce long-range transport of air pollutants can strengthen urban air quality management in Asia. An overview of available evidence of trans-boundary air pollution in Asia will be presented as well as the current status of regional programs aimed at preventing and reducing trans-boundary air pollution.</td>
<td>James Simpas, Consultant, Manila Observatory</td>
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<td><strong>Trans-boundary Air Pollution in Asia: What is the Scientific Evidence?</strong></td>
<td>Mylvakanam Iyngararasas, Senior Program Specialist, Regional Office for Asia and the Pacific, United Nations Environment Programme</td>
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<td><strong>United Nations Environment Programme’s Efforts to Address Trans-boundary Air Pollution in Asia</strong></td>
<td>Daniele Ponzi, Principal Environment Specialist, Asian Development Bank</td>
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<td><strong>A Regional Approach to Prevention and Control of Dust and Sand Storms in North East Asia: Air Quality Implications</strong></td>
<td>Sir Richard Mills, Director General, International Union of Air Pollution Prevention and Environmental Protection Associations</td>
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<td><strong>Global Cooperation for Air Pollution Research and Policies</strong></td>
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<td><strong>Panel Discussion: ‘How Important is Trans-boundary Air Pollution Control to Urban Air Quality Management in Asia?’</strong></td>
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<tr>
<td>13.01 - 14.00 pm</td>
<td>Lunch Break</td>
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<tr>
<td>14.01 - 15.45 pm</td>
<td><strong>Sub-plenary Session 7: Air Quality Monitoring and Emissions Inventories</strong></td>
<td>Chairperson: Dilip Biswas, former Chairman, Central Pollution Control Board, India</td>
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<td>This sub-plenary session will present the final results of a benchmarking study on air quality management capabilities in major Asian cities. The three subsequent presentations will deal with three important weaknesses in air quality management in Asia -- roadside air quality monitoring, source apportionment of air pollution, and modeling of air pollution trends.</td>
<td>Diwan-e-khas I</td>
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<tr>
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<td><strong>Final Results Benchmarking of Air Quality Management Capability in Asia</strong></td>
<td>Gary Haq, Research Associate, Implementing Sustainability Group, Stockholm Environment Institute</td>
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<td><strong>Roadside Air Quality Monitoring Compared with Ambient Air Quality Monitoring</strong></td>
<td>Kong Ha, Senior Environmental Protection Officer, Environment Transport Works Bureau; and Albert Leung, Environment Protection Department, Special Administrative Region, Hong Kong</td>
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<td><strong>Source Apportionment of Urban Air Pollution in Asia and Latin America</strong></td>
<td>Sarath Guttikunda, Consultant, The World Bank</td>
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<td><strong>The Role of Models in Air Quality Management</strong></td>
<td>Akula Venkatram, Professor, University of California; S. Trivikrama Rao, Atmospheric Sciences Modeling Division, Research Triangle Park</td>
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</table>
14.01 - 15.45 pm  
**Sub-plenary Session 8: Public Participation and Governance of AQM in Asia**  
Chairperson: Daniele Ponzi, Principal Environmental Specialist, Asian Development Bank

This sub-plenary session will discuss the institutional arrangements for air quality management in Asia. It will deal with the relationships between national and local governments and government and non-government organizations.

**Diwan-e-khas II**

- **Index of Social Capacity for Environmental Management**  
  Sara Okada, Researcher, Graduate School for International Development and Cooperation, Hiroshima University

- **Decentralization of Responsibility for Air Quality Management from the National to the Local Level**  
  Supat Wangwongwatana, Deputy Director, Pollution Control Department, Thailand

- **Air Quality Governance and the Role of the Judiciary in India**  
  Vijay Panjwani, Legal Counsel, Central Pollution Control Board

- **Panel Discussion: ‘Is Air Quality Governance in Asia Weak?’**  
  Sara Okada, Researcher, Graduate School for International Development and Cooperation, Hiroshima University; Supat Wangwongwatana, Deputy Director, Pollution Control Department, Thailand; Vijay Panjwani, Legal Counsel, Central Pollution Control Board, India; SV Bhave, Joint Secretary, Ministry of Heavy Industries and Public Enterprise, India; Rick Kassel, Natural Resources Defense Council

14.01 - 15.45 pm  
**Sub-plenary Session 9: The Costs of Air Pollution**  
Chairperson: Robert O'Keefe, Vice President, Health Effects Institute

This sub-plenary session will review available evidence of health and environmental costs resulting from air pollution in Asia collected through the Public Health and Air Pollution in Asia (PAPAP) program and other initiatives. The second part of the session will focus on how cost effectiveness and cost-benefit analysis of different policy options can support the formulation of more effective air quality management policies.

**Diwan-e-khas III**

- **Quantifying the Health Effects of Air Pollutants in Asian Cities**  
  Frank Speizer, Professor, Harvard Medical School

- **Impact of Air Pollution on Agriculture in Asia**  
  Madhoolika Agrawal, Professor, Banaras Hindu University

- **Cost-Effectiveness of Air Quality Management Policies in Germany**  
  Axel Friedrich, Head of Division Transport-Noise, Umweltbundesamt, Germany

- **What Role Should Cost Benefit Analysis Play in Air Quality Management in Asia?**  
  Maureen Cropper, Professor of Economics, University of Maryland

15.46 - 16.15 pm  
**Coffee/Tea**

16.16 - 18.00 pm  
**Closing Ceremony**  
Chairperson: Elisea Gozun, former Secretary Department of Environment and Natural Resources, Philippines

- **Country Reports: Review of Commitments Made in BAQ 2003 and Report on Future Plans for Improving Air Quality**  
  Glynda Bathan, Coordinator, CAI-Asia Secretariat, Asian Development Bank

- **Report by the BAQ 2004 Reporting Committee**  
  Frank Murray, Chairman, BAQ 2004 Reporting Committee; Professor, Murdoch University

- **BAQ 2004 Awards**  
  Jitendra Shah, BAQ 2004 Organizing Committee; Lead Environmental Specialist, The World Bank

- **BAQ 2006 Announcement**  
  Ridwan Tamin, Assistant Deputy For Vehicle Emission Affairs, Ministry of Environment, Indonesia

- **Vote of Thanks**  
  V. Rajagopalan, BAQ 2004 Organizing Committee; Chairman, Central Pollution Control Board

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### Better Air Quality 2004

**Jaypee Palace Hotel**  
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**Sub-workshop Sessions - 7 December (16.16 – 18.00 pm) and 8 December (9.00-10.45 am)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
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| **SW 1** | **Air Quality Monitoring Practices**  
*Chairperson: Supat Wangwongwatana, Deputy Director, Pollution Control Department, Thailand* | **Ambient Air Quality Monitoring in Pakistan**  
Murtaza Malik, Program Manager, National Environmental Action Plan - Support Program, Ministry of Environment, Pakistan |
| | **Air Quality Monitoring Program in Bangladesh: Trends Analysis of Criteria Pollutants and Source Apportionment of Particulate Matter in Dhaka, Bangladesh**  
Shahana Akhter, Deputy Director (Laboratory), Bangladesh Department of Environment and Bilikis Begum, Senior Scientific Officer, Bangladesh Atomic Energy Centre | **Air Quality Monitoring and Management In Kathmandu, Nepal**  
Chiranji Gautam, Urban Environment and Air Quality Management Advisor, Ministry of Population and Environment, Nepal |
| | **Urban Air Quality Monitoring Development In Tianjin, China**  
Qin Baoping, Director, Tianjin Environmental Monitoring Center | |
| **7 DECEMBER: 16.15 – 18.00 PM Diwan-e-khas I** | **Particle Air Pollution Monitoring With Nuclear Analytical Techniques: Challenges and Opportunities**  
Dieter Schwela, Visiting Scientist, Institute for Health and Consumer Protection, European Commission Joint Research Centre | **Impact of Policy Interventions on Urban Air Quality in India: A Retrospective Analysis**  
Sameer Akbar, Senior Environmental Specialist, The World Bank |
| | **The Air Quality Monitoring and Management System in Ho Chi Minh City, Vietnam**  
Bjarne Sivertsen, Research Director, Norwegian Institute for Air Research | **Air Quality Management of Particulate Matter Emitted from Vehicular Sources in Delhi**  
Pramila Goyal, Principal Scientific Officer, Centre for Atmospheric Sciences, Indian Institute of Technology |
| | **Passive Sampling of Nitrogen Dioxide and Sulfur Dioxide in Ambient Air of Chiang Mai**  
Kabindra Man Shakya, Assistant Officer, Ministry of Population and Environment, Nepal; and | **Framework of Local Air Quality Management in Malaysia**  
Nor Azam Ramli, Lecturer, Universiti Sains Malaysia; Peter Brimblecombe, Professor, University of East Anglia, UK |
| | **Quality Assurance In an Air Quality Monitoring Network In Central America**  
Markus Hangartner, Senior Researcher, Swiss Federal Institute of Technology | **Urban Versus Rural Air Pollution In Northern Vietnam**  
Pham Duy Hien, Professor, Vietnam Atomic Energy Commission |
| **SW 2** | **Particulate Matter Monitoring and Management**  
*Chairperson: Kimoanth N.T., Associate Professor, Environmental Engineering and Management, Asian Institute of Technology* | **The monitoring of fine particulate is a relatively new area in Asia. This sub-workshop will review the monitoring techniques and methodologies applied in a number of Asian cities and will review how monitoring data has been used by policy makers to control fine particulate emissions.** |
| **8 DECEMBER: 9.00 – 10.45 AM Diwan-e-khas I** | **Particle Air Pollution Monitoring With Nuclear Analytical Techniques: Challenges and Opportunities**  
Dieter Schwela, Visiting Scientist, Institute for Health and Consumer Protection, European Commission Joint Research Centre | **Impact of Policy Interventions on Urban Air Quality in India: A Retrospective Analysis**  
Sameer Akbar, Senior Environmental Specialist, The World Bank |
| | **The Air Quality Monitoring and Management System in Ho Chi Minh City, Vietnam**  
Bjarne Sivertsen, Research Director, Norwegian Institute for Air Research | **Air Quality Management of Particulate Matter Emitted from Vehicular Sources in Delhi**  
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| | **Quality Assurance In an Air Quality Monitoring Network In Central America**  
Markus Hangartner, Senior Researcher, Swiss Federal Institute of Technology | **Urban Versus Rural Air Pollution In Northern Vietnam**  
Pham Duy Hien, Professor, Vietnam Atomic Energy Commission |
| **SW 3** | **Public Participation and Awareness Raising for Air Quality Management** | |

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<td>3</td>
<td>Chairperson: Arif Pervaiz, Head Policy, International Union for the Conservation of Nature, Pakistan</td>
<td>This sub-workshop will present examples of effective stakeholder consultations for air quality management in Asia. The presentations will demonstrate how concerted efforts to involve different stakeholder groups in the various parts of the policy cycle can lead to more effective implementation of air quality management policies.</td>
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8 DECEMBER: 9.00 – 10.45 AM Meeting Room 2

Stakeholder Engagement in Air Quality Management Efforts in Ahmedabad
G. H. Trivedi and Sanjiv Tyagi, Member Secretary, Gujarat Pollution Control Board
Mandatory Disclosure of Automotive Emissions
Edy Purwanto M. Bakri, Sub-division Head of Measurement and Certification, Ministry of Environment, Indonesia
Environmental Communication for Cleaner Air in Malaysia
Roland Haas, Chief Technical Advisor, Malaysian - German Technical Cooperation - Deutsche Gesellschaft fuer Technische Zusammenarbeit
“Breathing May be Injurious to Health” - Increasing Air Pollution Awareness in Hyderabad
Sandeep Ganesh, Project Advisor, Winrock International, India

SW 4
Using Routinely Collected Air Quality Monitoring Data for Health Research in Asia
Chairpersons: Robert O’Keefe, Vice-President, Health Effects Institute and Aaron Cohen, Principal Scientist, Health Effects Institute
In this workshop, investigators from several cities across Asia will discuss their experience using the available air quality monitoring data in conducting health impact studies. Strengths, limitations, and suggestions for data access, management, and linkages with health data will be addressed. In addition, attention will be given to a new study in Ho Chi Minh City that will assess the relationship between poverty, air pollution, and health.

7 DECEMBER: 16.15 – 18.00 PM Diwan-e-khas II

Approaches to Studying the Relationship between Poverty, Air Pollution, and Health in Ho Chi Minh City, Vietnam
Sumi Mehta, Staff Scientist, Health Effects Institute
Health Impacts of Kathmandu’s Air Pollution
Bhushan Tuladhar, Executive Director, Clean Energy Nepal
Interaction Between Air Pollution and Respiratory Viruses: Time-Series Studies for Daily Mortality and Hospital Admissions
CM Wong, Associate Professor, Department of Community Medicine, The University of Hong Kong
Association of Outdoor Air Pollution and Chronic Respiratory Morbidity in a Town of Northern India
J S Thakur, Assistant Professor, Post Graduate Institute of Medical Education and Research, Chandigarh

SW 5
Non-Motorized Transport and Bus-Rapid Transit
Chairpersons: Karl Fjellstrom, Country Director for China and Bangladesh Institute for Transportation and Development Policy and Gary Haq, Research Associate, Stockholm Environmental Institute
This sub-workshop will highlight the importance of incorporating non-motorized transport modes in urban transportation planning in Asia. Presentations will challenge the current paradigms on which transport planning is based in most Asian cities. The second part of the sub-workshop will focus on, and review, the recent attention given to the development of bus rapid transit systems in several major Asian cities.

7 DECEMBER: 16.15 – 18.00 PM Poolview Pavilion

Achieving a Mobility Revolution in Asia Through Non-Motorised Transport
John Whitelegg, Head of Sustainable Development, Stockholm Environment Institute
Another Look at How We Define and Measure ‘Success’ in Tackling Transport Impacts: Beyond That ‘Oh So Tempting’ Tailpipe Focus
Paul Barter, Visiting Fellow, National University of Singapore
Improving Air Quality by Using a System Approach: Leapfrogging the Cliffs in Traffic Systems and Air Quality
Hermann Knoflacher, Professor, Head of Institute of Transport Planning and Traffic Engineering, University of Technology, Vienna
Bike Path Initiative for Jakarta
Tory Damantoro, Transport Researcher, Pelangi Indonesia

8 DECEMBER: 9.00 – 10.45 AM Poolview Pavilion

Bus-Rapid Transit Planning, Institutional Reform and Air Quality: Lessons for Asia
Walter Hook, Executive Director, Institute for Transportation and Development Policy
TransJakarta Bus-way: A Closer Look
Rini Daryati, Head of System Development, Communication Agency for Jakarta Local Authority

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1. Surface Ozone and Its Impacts
   Chairperson: Moti Mittal, Senior Scientist, Ohio Supercomputer Center

   Ozone has been identified as an important pollutant of concern in several Asian cities. This sub-workshop will discuss the science, the monitoring methodologies, and the effects of this recent phenomenon in Asia.

   7 DECEMBER: 16.15 – 18.00 PM: Meeting Room 1

   Air Pollutants, Human Health and Agricultural Yields: Economic Risk and Poverty Reduction in South Asia
   Moti L. Mittal, Senior Scientist, Ohio Supercomputer Center

   Regional Pollution and Intercontinental Transport: Impact on Air-Quality in Asia
   Manish Naja, Researcher, Frontier Research Center for Global Change, Japan

   Photochemical Smog Pollution in Jakarta, Indonesia
   Dollaris R. Suhadi, Post-Graduate Student, Universiti Putra, Malaysia

   Prediction of Maximum Daily Ozone Levels Using Neural Network Models in Bangkok
   Le Hoang Nghiem, Doctoral Student, Asian Institute of Technology, Thailand

2. Air Quality Modeling Theory and Practice
   Chairperson: Akula Venkatram, Professor, University of California

   Improvements have been made in ambient air quality monitoring in several of the major cities in Asia. However, few cities have conducted reliable and comprehensive modeling studies. This sub-workshop will review some of the studies that have been conducted and will formulate recommendations for how to introduce broad-based modeling studies and how to apply them to policy making.

   8 DECEMBER: 9.00 – 10.45 AM: Meeting Room 3

   Guidelines for Allocating Air Pollution Assimilative Capacity for Industrial Areas Located In Major Industrial Region
   Vilas Nitivattananon, Assistant Professor, Asian Institute of Technology

   Policy for Air Pollution Control Strategy by Using the Air Pollutant Dispersion Model (PM10) in Surabaya
   Chamidha, Head of Air Laboratory, Environmental Department of Surabaya

   Air Quality Modeling as a Vital Component in the Integrated Environmental Strategies (IES) Project in India
   V. Srinivas, Senior Faculty & Head, Air Division Technical Operations, Environment Protection Training and Research Institute

   Performance of Dispersion Models in Urban Areas
   Akula Venkatram, Professor, University of California

3. Indoor Air Pollution Management
   Chairperson: Sumeet Saksena, Fellow, East-West Center

   Indoor air pollution is often overlooked in the discussion on air quality in Asia. This sub-workshop presents evidence of the seriousness of the problem, reviews different methodologies to assess the problem, and introduces programs to prevent and combat indoor air pollution.

   7 DECEMBER: 16.15 – 18.00 PM Pavilion Heights

   Indoor Air Quality for Poor Families: New Evidence from Bangladesh
   Susmita Dasgupta, Senior Economist, The World Bank

   Emission of Polycyclic Aromatic Hydrocarbons and Particulate Matter from Domestic Cooking Using Coal
   Nghiem Trung Dung, Senior Lecturer, Hanoi University of Technology

   Health Impact of Biomass Fuel Use in Rural India
   Twisha Lahiri, Assistant Director, Chittaranjan National Cancer Institute

   An Integrated Evaluation of Indoor Air Pollution Based on Health Risks and Greenhouse Gas Emissions in Andhra Pradesh, India
   K. Balakrishnan, Professor & Head of Department, Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute, Chennai

   Standard Methods For Monitoring Indoor Air Pollution to Evaluate Improved Stove Programs: Plans, Protocols, & Progress
   Kyra Naumoff, PhD Student, University of California at Berkeley

4. Air Quality Management in the Industrial Sector
   Chairperson: Katherine Grover, Policy Analyst, Clean Air Markets Division, United States Environmental Protection Agency

   Air Quality Management in the Industrial Sector
   Katherine Grover, Policy Analyst, Clean Air Markets Division, United States Environmental Protection Agency
This sub-workshop focuses on the review of methodologies to quantify emissions from the industrial sector and the sources from which they originate. The sub-workshop will also present two cases on the application of stationary source control within a regional framework and the application of Best Available Techniques as the basis for controlling stationary sources of emissions.

7 DECEMBER: 16.15 – 18.00 PM Meeting Room 2

**Source-level Emissions Quantification Tools – The Case of the Indian Cement Sector**

Girish Seti, The Energy Resources Institute

**Developing A Technically Sound and Scientifically Defensible Emissions Inventory for Combustion Sources in Hyderabad, India**

Adam Chambers, Senior Project Leader, National Renewable Energy Laboratory

**Capacity Building for Air Quality Management in Central Asia**

Lars Nordberg, Advisor, Swedish International Development Agency

**Clean Air Regulation for Stationary Sources - Best Available Techniques as Innovation in Countries with Emerging Economies**

Pia Denzin, Technical Advisor, Malaysian - German Technical Cooperation - Deutsche Gesellschaft fuer Technische Zusammenarbeit

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**Sustainable Urban Transport in Asia**

Chairperson: Lee Schipper, Director for Research, EMBARQ

This sub-workshop will review basic assumptions on which transport planning is based in Asia and will make a case for a more broad based and inclusive approach to urban transport planning that integrates environmental, social and economic considerations. Case studies will be presented for three cities that participated in the Partnership for Sustainable Urban Transport in Asia (PSUTA) program.

7 DECEMBER: 16.15 – 18.00 PM Pavilion of China

**Against Air Pollution and Congestion in Our Cities – Sustainable Urban Transport in Malaysia**

Jarina Mohd Jani, Assistant Project Manager, Malaysian - German Technical Cooperation - Deutsche Gesellschaft fuer Technische Zusammenarbeit

**Making Way for Public Rapid Transit in South Asia and Its Impact on Energy and Environment**

Ranjan Kumar Bose, Senior Fellow, The Energy and Resources Institute

**Clean Air Is Not About Tail Pipes (Only)**

Dinesh Mohan, Henry Ford Professor for Biomechanics and Transportation Safety, Transportation Research and Injury Prevention Programme, Indian Institute of Technology

**The Total Cost of Infrastructure: How to Improve the City Budget by the Use of Better Planning Tools (Least Cost Transportation Planning)**

Axel Friedrich, Head of Division Transport-Noise, Umweltbundesamt, Germany

8 DECEMBER: 9.00 – 10.45 AM Pavilion of China

Indicators: Reliable Signposts on the Silk Road to Sustainable Transportation In Xi’an

Mao Zhongan, Deputy Division Chief, Department of Planning & Investment, Xi’an Municipal Construction Commission

Indicators: Reliable Signposts on the Road to Sustainable Transportation in Pune

Narayan Iyer, Independent Consultant

Indicators: Reliable Signposts on the Road To Sustainable Transportation in Hanoi

Le Van Dat, Partnership for Sustainable Urban Transport in Asia, Transport Development Strategy Institute, Hanoi

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**The Role of Inspection and Maintenance in Air Quality Management**


Inspection and maintenance is often described as the weakest link in the management of emissions from mobile sources of pollution in Asia. The first part of the sub-workshop will review the development of methodologies for the testing of in-use diesel vehicles. In the second part of the sub-workshop, a number of more general cases on effective inspection and maintenance systems for Asia will be presented.

7 DECEMBER: 16.15 – 18.00 PM Diwan-e-aam II

**Diesel Emissions Inspection and Maintenance Lessons That Can Be Learnt from the Mexican Experience and from Other Developing Countries**

John Rogers, Director, Trafalgar SA de CV, Mexico

**Heavy-duty Diesel I&M: Lessons from North America**

K.G. Duleep, Managing Director, Energy Environment Associates

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**Emission Factor Development for Asian Vehicles**

**Chairperson:** Peter Anyon, Director, Air Quality Technologies Pty Ltd.

The absence of reliable emission factors for the transport sector has frequently been blamed for the absence of reliable emission inventories, modeling and policies. This sub-workshop will present the results of a number of independent studies, the outcomes of which can potentially help air quality modelers and policy makers in drawing up city-specific models and policies. The sub-workshop will review the lessons that can be learned from these cases in the formulation of Asia specific emission factors for the transport sector.

**7 DECEMBER: 16.15 – 18.00 PM Diwan-e-Khas III**

- **Instrumented In-Use-Vehicles: A Versatile Tool to Measure Emissions**
  - **Emission Factor Development in Thailand**
  - **Estimation of Mobile Source Emissions in Bangkok Metropolitan Area, Thailand – Development of Driving Cycles and Emissions Factor**

- **8 DECEMBER: 9.00 – 10.45 AM Diwan-e-Khas III**
  - **Sustainable Transport Indicators: From Raw Data to Indicators - Vehicle Activity Study, Shanghai China**
  - **Estimation of Emissions of Pollutants from Transport Sector in Indian Mega-cities**

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**Improving Fuel Quality in Asia**

**Chairperson:** Leon Halliburton, Fuels Technical Manager, Shell Products East Zone

This sub-workshop will present the draft findings of three background papers that were prepared in the context of the CAI-Asia – Oil Industry Dialogue for Cleaner Fuels in Asia. It will also provide an overview of the current status of fuel quality monitoring in Asia.

**8 DECEMBER: 9.00 – 10.45 AM Pavilion Heights**

- **Linkages Between Stricter Emissions Standards and Fuel Quality: A Cost Benefit Analysis of Lowering Sulfur Levels in Gasoline and Diesel**
- **Producing Cleaner Fuels in Asia**
- **Cleaner Fuels in Asia, the Role of Pricing, Taxation and Incentives**
- **An Overview of Fuel Quality Monitoring**

---

**Co-benefits of Local Air Quality Management and Climate Change Mitigation**

**Chairperson:** Adam Chambers, Senior Project Leader, United States National Renewable Energy Lab

This sub-workshop will build on the sub-plenary session on co-benefits of local air quality management and climate change mitigation and will present and discuss a number of strategies and campaigns to assist Asian cities in the formulation and implementation of co-benefit approaches.

**7 DECEMBER: 16.15 – 18.00 PM Summit Lounge**

- **Co-benefits from Urban Transportation Strategies – Comparative Analysis of Local Emission Control Strategies vis-à-vis Greenhouse Gas Mitigation Strategies**

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**Subject**

- Diesel Inspection & Maintenance – The Influence of Testing Strategies on Emission Reduction Outcomes
- On-road Emissions in Asia Measured by Remote Sensing
- Diesel Vehicle Emissions Control and Its Emission Benefits in Hong Kong
- Approach Towards Development of an Effective In-Use Vehicle Emission Inspection For India
- Sustainable Transport Indicators: From Raw Data to Indicators - Vehicle Activity Study, Shanghai China
- Estimation of Emissions of Pollutants from Transport Sector in Indian Mega-cities
- Producing Cleaner Fuels in Asia
- Cleaner Fuels in Asia, the Role of Pricing, Taxation and Incentives
- An Overview of Fuel Quality Monitoring
- Co-benefits from Urban Transportation Strategies – Comparative Analysis of Local Emission Control Strategies vis-à-vis Greenhouse Gas Mitigation Strategies

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**Speaker**

- Peter Anyon, Director, Air Quality Technologies Pty Ltd
- Niranjan Vescio, General Manager, Environmental Systems Products Holdings Inc.
- Matthew Tsang, Environmental Protection Officer, Environment, Transport and Works Bureau, Hong Kong, SAR
- Balraj Bhanot, Director, The Automotive Research Association of India
- Horst Preschern, General Manager, AVL Automotive Thai Co., Ltd.
- Panya Warapetcharayut, Director, Automotive Air Pollution Section, Pollution Control Department, Thailand
- Ryo Masutomo, Director, Transport Cooperation Research Institute, Japan Transport Cooperation Association
- Changhong Chen, Professor/Director, Shanghai Academy of Environmental Sciences
- Chhemendra Sharma, APN Liaison Officer, National Physical Laboratory, New Delhi
- Michael Walsh, Independent Consultant
- John Courtis, Director, Daedalus, LLC
- Grant Boyle, Program Associate, United Nations University
- Liisa Kiuru, Director, Asia, International Fuel Quality Center
- Sudhakar Yedla, Policy Researcher, Institute for Global Environmental Strategies
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<tr>
<td>Specific Transport Measures to Reduce Emissions In Hyderabad, India</td>
<td>Yash Sachdeva, Additional General Manager (Urban Transport) RITES Ltd.</td>
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<tr>
<td>The Cities for Climate Protection Campaign Harmonizing Air and Climate Protection</td>
<td>Emani Kumar, International Council for Local Environmental Initiatives - India</td>
</tr>
<tr>
<td>Panel Discussion: Strengthening of Co-benefit Approaches in Policy Making in Asian Cities</td>
<td>Sudhakar Yedla, Institute for Global Environmental Strategies; Yash Sachdeva, RITES Ltd; Emani Kumar, International Council for Local Environmental Initiatives; Vaghar Zakaria, Managing Director, Hagler Bailly, Pakistan; Hu Tao, Policy Research Center for Environment and Economy, State Environmental Protection Administration, P.R. China</td>
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**SW 15 Air Quality Management Policies and Implementation**

*Chairperson: Dieter Schwela, Senior Scientific Advisor, Stockholm Environment Institute, Stockholm, Sweden and C.K. Amaratunge, Project Director, Air Resources Management Center, Sri Lanka*

This sub-workshop will provide an overall framework for urban air quality management in Asia and will present case studies on urban air quality management from a range of Asian cities and countries. Common strengths and weaknesses will be identified, as well as recommendations for improvement.

**7 DECEMBER: 16.15 – 18.00 PM Diwan-e-aam I**

*Implementation of the Strategic Framework for Air Quality Management in Asia: A Way Forward*

- Dieter Schwela, Senior Scientific Advisor, Stockholm Environment Institute, Stockholm, Sweden
- Tim Chatterton, Research Fellow, Air Quality Management Resource Centre, University of the West of England
- Sanchita Jindal, Joint Secretary, Ministry of Environment and Forests

*Establishing Frameworks for Effective and Efficient Air Quality Management at National and Local Levels*

*Vehicular Pollution Control - Indian Perspective and Future Strategies*

*Progress of Beijing in Control Vehicular Emissions*

- Hao Jiming, Director, Tsinghua University, Beijing, China

**8 DECEMBER: 9.00 – 10.45 AM Diwan-e-aam I**

*The Environmental Benefit Mapping Analysis Program, International Version*

- Zachary Pekar, Health Scientist, United States Environmental Protection Agency
- Sugath Yaglema, Assistant Secretary, Ministry of Environment and Natural Resources; Nanda Senanayake, Additional Director, Natural Resource Management Center, Department of Agriculture, Sri Lanka

*Air Pollution and Contributions of Particulate Matter from Different Types of Diesel Vehicles in Sri Lanka*

*Implementing a Clean Air Program in the City of Puerto Princesa, Palawan, Philippines*

- Jovinee Sagun, Acting Assistant City Planning and Development Coordinator, City Government of Puerto Princesa, Philippines

*Integrated Air Quality Management in Indonesia*

- Ridwan Tamin, Assistant Deputy For Vehicle Emission Affairs and Amelia Rachmatunisa, Head, Air Quality Monitoring Sub-division, Ministry of Environment, Indonesia
- Mingquan Wichayarungsaid, Director, Air Quality and Noise Management Bureau, Pollution Control Department Pollution Control Department, Thailand

**SW 16 Market-Based Mechanisms for Air Pollution Control**

*Chairperson: Katherine Grover, Policy Analyst, Clean Air Markets Division, United States Environmental Protection Agency*

The use of market-based instruments to regulate emissions is still in its infancy. This sub-workshop presents a number of promising cases in Asia that demonstrate the potential of market-based instruments in Asia.

**8 DECEMBER: 09.00 – 10.45 AM Summit Lounge**

*Voluntary Agreements for Energy Efficiency and Emissions Reduction in Industry: A Survey of International Experience and Initial Results From a Pilot Project in Shandong Province, China*

- Lynn Price, Deputy Group Leader, Energy Analysis Department, Lawrence Berkeley National Laboratory
- Mausami Desai, United States Environmental Protection Agency

*Assessing the Feasibility of Market-based Air Pollution Control: A Preliminary Look at the Indian Power Sector*
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| Using Market Based Instruments to Achieve Environmental Policy Goals: The Case of Cess on Coal | Rita Pandey, Fellow (Associate Professor), National Institute of Public Finance and Policy, India
| Sound Economic Incentives For CNG Buses in Metro Manila | Jose Logarta, Action for Economic Reforms, Philippines
| Environmental Property Rights, Payments for Environmental Services, and Budget Transfers: Tools for Controlling Cross-Boundary Air Pollution and Sand Storms in Western China | Jian Xie, Senior Environment Specialist, The World Bank

SW 17 Retrofit Technologies for Reducing Diesel Engine Emissions

Chairperson: Timothy Johnson, Director-Emerging Technologies, Corning Incorporated

The introduction of ultra-low sulfur diesel has resulted in the emergence of advanced emission control devices to regulate fine particulate and toxic gasses from diesel vehicles. This sub-workshop will review state-of-the-art technologies that have been introduced in Europe, North America and Japan and will discuss their relevance for Asia.

7 DECEMBER: 16.15 – 18.00 PM Meeting Room 3

Diesel Vehicle Emissions in Asian Cities

Mario Camarsa, Executive Director, Enstrat International

Diesel Emission Control Technology for Retrofit Applications

Timothy Johnson, Director - Emerging Technologies and Regulations, Corning Incorporated

Retrofit Strategies to Reduce Urban Particulate Pollution

Richard Kassel, Senior Attorney, Natural Resources Defense Council

Retrofit Emission Technologies for Heavy-Duty Vehicles: State-of-the-Art

Sougato Chatterjee, Manager - Application Engineering HDD & SSEC, Johnson Matthey

Potential of Diesel Engine Emission Reductions

Gerhard Ziegler, General Manager, R&D and Application, Motor Industries, Co. Ltd.