



Better Air Quality 2004

Jaypee Palace Hotel
Agra, India
6-8 December 2004

Organized by



SIAM
Society of Indian Automobile Manufacturers

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BAQ Workshop Format: Overview

Time	6 December	7 December	8 December
9.00 - 10.45 am	Opening Session and Keynote Address	Poster Session (Posters on display on 7-8 December)	Sub-workshop Sessions
10.46 - 11.15 am	Coffee/Tea	Coffee/Tea	Coffee/Tea
11.16 - 13.00 pm	Air Quality Management in India	Prevention vs. Control of Air Pollution in Asia	Urban AQM and Transboundary Air Pollution in Asia
13.01 - 14.00 pm	Lunch	Lunch	Lunch
14.01 - 15.45 pm	Sub-plenary Sessions: 1: Air Quality Monitoring & Management in India 2: Indoor Air Pollution 3: AQM & Society's Role in India	Sub-plenary Sessions: 4: Management of In-use Vehicles 5: Co-benefits of Climate Change 6: Sustainable Urban Transport in Asia	Sub-plenary Sessions: 7: Air Quality Monitoring & Emissions Inventories 8: Public Participation & Governance of AQM 9: Costs of Air Pollution
15.46 - 16.15 pm	Coffee/Tea	Coffee/Tea	Coffee/Tea
16.16 - 18.00 pm	Networking Session	Sub-workshop Sessions	Closing Session
7.00 pm onwards	Evening Social Event	Evening Social Event	Evening Social Event

BAQ Program: Plenary, Sub-plenary, & Sub-workshop Sessions

(as of 20 December 2004)

Day One - 6 December 2004. Monday

Time	Subject	Speaker
9.00 - 10.45 am	Opening Ceremony and Keynote Address	
	<i>Chairperson: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines</i>	
	<i>Inauguration & Lamp Lighting</i>	<ul style="list-style-type: none"> Shri Namo Narayan Meena, Minister of State, Ministry of Environment & Forests, India
	<i>Welcome Remarks</i>	<ul style="list-style-type: none"> Supat Wangwongwatana, Chairperson, Clean Air Initiative for Asian Cities V. Rajagopalan, Chairman, Central Pollution Control Board, India Jagdish Khattar, President, Society of Indian Automobile Manufacturers
	<i>Opening Remarks</i>	<ul style="list-style-type: none"> Jan van Heeswijk, Director General, Regional and Sustainable Development Department, Asian Development Bank Michael Carter, Country Director (India), The World Bank Prodipto Ghosh, Secretary, Ministry of Environment and Forests, India
	<i>Formal Inauguration of BAQ 2004</i>	Shri Namo Narayan Meena, Minister of State, Ministry of Environment & Forests, India
	<i>Implementation of BAQ 2003 Commitments for Viet Nam</i>	Phan Quynh Nhu, Clean Air Initiative for Asian Cities Network Coordinator for Vietnam, United States – Asia Environmental Partnership
	<i>Keynote Speech</i>	Enrique Peñalosa, former Mayor of Bogotá, Colombia
	<i>Vote of Thanks</i>	R K Vaish, Joint Secretary, Ministry of Environment and Forests, India
10.46 - 11.15 am	Coffee/Tea	
11.16 - 13.00 pm	Air Quality Management in India	
	<i>Chairpersons: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines and Prodipto Ghosh, Secretary, Ministry of Environment and Forests, India</i>	
	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.	

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Time	Subject	Speaker
	<i>Integrated Air Quality Management in India</i>	V. Rajagopalan, Chairman, Central Pollution Control Board, India
	<i>Land Use Planning and Travel Demand Management in India</i>	Geetam Tiwari, Professor, Transportation Research and Injury Prevention Programme, Indian Institute of Technology
	<i>The Contribution of Natural Gas Towards Cleaner Air in India</i>	SC Hatwal, Gas Authority of India, Ltd.
	<i>Panel Discussion: Initiatives to Reduce Emissions from Mobile Sources of Pollution in India</i>	Prodipto Ghosh, Secretary, Ministry of Environment and Forests, India; V. Rajagopalan, Chairman, Central Pollution Control Board, India; Dilip Chenoy, Director General, Society of Indian Automobile Manufacturers, Geetam Tiwari, Professor, Transportation Research and Injury Prevention Programme, Indian Institute of Technology; SC Hatwal, Gas Authority of India, Ltd.
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 <i>Chairperson: Frank Murray, Professor, Murdoch University, Perth, Australia</i>	
	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	
	<i>Adverse Health Effects of Air Pollution in India</i>	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
	<i>Experience of Air Pollution Control in Last two Decades in India</i>	B. Sengupta, Member Secretary, Central Pollution Control Board
	<i>Review and Results of Studies on Inventories and Source Apportionment</i>	Rakesh Kumar, Scientist & Head, National Environmental Engineering Research Institute, Mumbai
	<i>Integrated Air Quality Management at the City level: The Case of Pune</i>	Srinivas Bonala, Development Engineer (Traffic), Pune Municipal Corporation
14.01 - 15.45 pm	Sub-plenary Session 2: Indoor Air Pollution Management <i>Chairperson: Sameer Akbar, Senior Environmental Specialist, The World Bank</i>	
	This sub-plenary session will present the effects of in-door air pollution on health in both a rural and urban setting. Experiences and policies for in-door 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	
	<i>Rural and Urban Exposure to Indoor Air Pollution</i>	Sumeet Saksena, Fellow, East-West Center
	<i>Experience and Policies for Indoor Air Pollution in India</i>	Sumi Mehta, Health Effects Institute
	<i>Sustainable Intervention Strategies for Reducing IAP Exposure in China Rural Areas</i>	Ning Tang, Professor, China Center for Disease Prevention and Control
	<i>Panel Discussion: Solutions to Control Indoor Air Pollution</i>	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

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Time	Subject	Speaker
14.01 - 15.45 pm	Sub-plenary Session 3: AQM and Society's Role in India <i>Chairperson: Winston Bowman, Regional Coordinator, United States- Asia Environment Partnership, USAID</i>	
	<p>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.</p>	
	<p>Diwan-e-khas III</p>	
	<i>The Role of the Private Sector in Air Quality Monitoring and Air Quality Management in India</i>	Sandeep Shrivastava, Counsellor, Environment Management Division, Confederation of Indian Industry
	<i>Civil Society Perspective on Air Quality Governance</i>	Debi Goenka, Member Activist, Bombay Environmental Action Group
	<i>Impact of State Policies and Actions on Urban Air Quality</i>	Dilip Biswas, Former Chairman, Central Pollution Control Board
	<i>Panel Discussion: 'Does Air Quality Governance in India Work?'</i>	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 Pavillion
Philippines	Meeting Room 2
Sri Lanka	Meeting Room 4
Thailand	Pavilion of China
Viet Nam	Summit Lounge

Thematic Groups

Clean Air Training Network (CATNet)	Diwan-e-aam II
Asia	
The International Society for Environmental Epidemiology, South Asia Regional Chapter	Meeting Room 1

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Day Two - 7 December 2004. Tuesday

Time	Subject	Speaker
9.00 - 10.45 am	Poster Session	
	<p>About 100 to 120 posters will be presented in three thematic clusters. Posters will be up for additional viewing until 8 December.</p> <p>Cluster 1: Health and Environmental Impacts of Air Pollution Cluster 2: Reducing Emissions from Mobile Sources Cluster 3: Air Quality Monitoring and Management</p>	<p>Diwan-e-khas III Diwan-e-aam I Diwan-e-aam II</p>
10.46 - 11.15 am	Coffee/Tea	
11.16 - 13.00 pm	Prevention vs. Control of Air Pollution in Asia	
	<p><i>Chairpersons: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines and Meryllin Zaw-Mon, Director Certification, United States Environmental Protection Agency</i></p> <p>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.</p> <p><i>Command and Preventive Control Strategies for Improving Air Quality: Experience Around the Globe and Lessons for Asia</i> <i>Non-Motorized Transport and Sustainable Mobility</i> <i>Planning the Energy Scenarios for Asia: How to Minimize Negative Air Quality Implications</i> <i>The Need for Extensive Public Participation in Decision-making</i></p>	<p>Dan Greenbaum, Vice Chairman, Committee on Air Quality Management, National Academy of Science; President, Health Effects Institute Walter Hook, Executive Director, Institute for Transportation and Development Policy Lee Schipper, Director for Research EMBARQ on behalf of Lew Fulton, Transport Energy Specialist, International Energy Agency Jitendra Shah, Secretariat, Clean Air Initiative for Asian Cities; Lead Environmental Specialist, The World Bank</p>
13.01 - 14.00 pm	Lunch Break	
14.01 - 15.45 pm	Sub-plenary Session 4: Management of In-use Vehicle Emissions in Asia	
	<p><i>Chairperson: Kong Ha, Senior Environmental Protection Officer, Environment Transport Works Bureau, Hong Kong, SAR; Designate Chairperson, Clean Air Initiative for Asian Cities</i></p> <p>The 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.</p> <p>Diwan-e-khas I</p> <p><i>Reducing Air Pollution from Urban Transport — Summary of the World Bank Study</i> <i>Vehicle Inspection and Maintenance Programs: International Experience and Best Practices</i> <i>Japan Petroleum Energy Center Activities for Clean Air</i> <i>CAI-Asia – Oil Industry Dialogue for Cleaner Fuels in Asia</i> <i>Partnership for Cleaner Fuels and Vehicles</i></p>	<p>Todd Johnson, Senior Environment Specialist, The World Bank 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</p>

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Time	Subject	Speaker
14.01 - 15.45 pm	<p>Sub-plenary Session 5: Co-benefits of Climate Change Mitigation and Urban Air Quality Management <i>Chairperson: Katherine Sibold, Program Manager, Integrated Environmental Strategies, United States Environmental Protection Agency</i></p> <p>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.</p> <p>Diwan-e-khas II</p>	<p>Ajay Mathur, President, SenergyGlobal</p> <p>Daniel McNamara, Director, Manila Observatory</p> <p>N.S. Vatcha, Environment Protection Training and Research Institute, Hyderabad</p> <p>Vaqqar Zakaria, Managing Director, Hagler Bailly, Pakistan</p>
14.01 - 15.45 pm	<p>Sub-plenary Session 6: Sustainable Urban Transport in Asia <i>Chairperson: Choudhury Mohanty, Environment Coordinator, United Nations Center for Regional Development</i></p> <p>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.</p> <p>Diwan-e-khas III</p>	<p>Charles Melhuish, Lead Transport Specialist, Asian Development Bank</p> <p>Lee Schipper, Director for Research, EMBARQ – Partnership for Sustainable Urban Transport in Asia Project Project</p> <p>Taufik Adiwianto, Head of Infrastructure Division, Badan Pengelola Transjakarta - Busway</p> <p>Upenra Tripathy, Managing Director, Bangalore Metropolitan Transport Corporation</p>
10.46 - 11.15 am	Coffee/Tea	
16.16 - 18.00 pm	Sub-workshop Sessions	

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Day Three - 8 December 2004. Wednesday

Time	Subject	Speaker
9.00 - 10.45 am	Sub-workshop Sessions	
10.46 - 11.15 am	Coffee/Tea	
11.16 - 13.00 pm	<p>Urban Air Quality Management and Trans-boundary Air Pollution in Asia <i>Chairpersons: Elisea Gozun, former Secretary, Department of Environment and Natural Resources, Philippines</i></p> <p>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.</p>	<p><i>Trans-boundary Air Pollution in Asia: What is the Scientific Evidence?</i> James Simpas, Consultant, Manila Observatory</p> <p><i>United Nations Environment Programme's Efforts to Address Trans-boundary Air Pollution in Asia</i> Mylvakanam lyngararasan, Senior Program Specialist, Regional Office for Asia and the Pacific, United Nations Environment Programme</p> <p><i>A Regional Approach to Prevention and Control of Dust and Sand Storms in North East Asia: Air Quality Implications</i> Daniele Ponzi, Principal Environment Specialist, Asian Development Bank</p> <p><i>Global Cooperation for Air Pollution Research and Policies</i> Sir Richard Mills, Director General, International Union of Air Pollution Prevention and Environmental Protection Associations</p> <p><i>Panel Discussion: 'How Important is Trans-boundary Air Pollution Control to Urban Air Quality Management in Asia?'</i> James Simpas, Consultant, Manila Observatory; Daniel McNamara, Manila Observatory; Mylvakanam lyngararasan, Senior Program Specialist, Regional Office for Asia and the Pacific, United Nations Environment Programme; Daniele Ponzi, Principal Environment Specialist, Asian Development Bank; Lars Nordberg, Advisor, Swedish International Development Agency; Sir Richard Mills, Director General, International Union of Air Pollution Prevention and Environmental Protection Associations</p>
13.01 - 14.00 pm	Lunch Break	
14.01 - 15.45 pm	<p>Sub-plenary Session 7: Air Quality Monitoring and Emissions Inventories <i>Chairperson: Dilip Biswas, former Chairman, Central Pollution Control Board, India</i></p> <p>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.</p>	<p><i>Diwan-e-khas I</i></p> <p><i>Final Results Benchmarking of Air Quality Management Capability in Asia</i> Gary Haq, Research Associate, Implementing Sustainability Group, Stockholm Environment Institute</p> <p><i>Roadside Air Quality Monitoring Compared with Ambient Air Quality Monitoring</i> Kong Ha, Senior Environmental Protection Officer, Environment Transport Works Bureau; and Albert Leung, Environment Protection Department, Special Administrative Region, Hong Kong</p> <p><i>Source Apportionment of Urban Air Pollution in Asia and Latin America</i> Sarath Guttikunda, Consultant, The World Bank</p> <p><i>The Role of Models in Air Quality Management</i> Akula Venkatram, Professor, University of California; S. Trivikrama Rao, Atmospheric Sciences Modeling Division, Research Triangle Park</p>

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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
D. Chenoy, BAQ 2004 Organizing Committee; Director General, Society of Indian Automobile Manufacturers
Cornie Huizenga, BAQ 2004 Organizing Committee; Head, CAI-Asia Secretariat

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

No.	Subject	Speaker
SW 1	Air Quality Monitoring Practices <i>Chairperson: Supat Wangwongwatana, Deputy Director, Pollution Control Department, Thailand</i>	
	This sub-workshop will review the state of air quality monitoring in different Asian countries. It will aim to assess common strengths and weaknesses and to prioritize areas for improvement.	
	7 DECEMBER: 16.15 – 18.00 PM Diwan-e-khas I	
	<i>Ambient Air Quality Monitoring in Pakistan</i>	Murtaza Malik, Program Manager, National Environmental Action Plan - Support Program, Ministry of Environment, Pakistan
	<i>Air Quality Monitoring Program in Bangladesh: Trends Analysis of Criteria Pollutants and Source Apportionment of Particulate Matter in Dhaka, Bangladesh</i>	Shahana Akhter, Deputy Director (Laboratory), Bangladesh Department of Environment and Bilkis Begum, Senior Scientific Officer, Bangladesh Atomic Energy Centre
	<i>Air Quality Monitoring and Management In Kathmandu, Nepal</i>	Chiranjibi Gautam, Urban Environment and Air Quality Management Advisor, Ministry of Population and Environment, Nepal
	<i>Urban Air Quality Monitoring Development In Tianjin, China</i>	Qin Baoping, Director, Tianjin Environmental Monitoring Center
	8 DECEMBER: 9.00 – 10.45 AM Diwan-e-khas I	
	<i>Air Quality Status and Classification of Cities Based on Indicators</i>	T S Panwar, Fellow, The Energy and Resources Institute
	<i>The Air Quality Monitoring and Management System in Ho Chi Minh City, Vietnam</i>	Bjarne Sivertsen, Research Director, Norwegian Institute for Air Research
	<i>Passive Sampling of Nitrogen Dioxide and Sulfur Dioxide in Ambient Air of Chiang Mai</i>	Kabindra Man Shakya, Assistant Officer, Ministry of Population and Environment, Nepal; and
	<i>Quality Assurance In an Air Quality Monitoring Network In Central America</i>	Markus Hangartner, Senior Researcher, Swiss Federal Institute of Technology
SW 2	Particulate Matter Monitoring and Management <i>Chairperson: Kimoanh N.T., Associate Professor, Environmental Engineering and Management, Asian Institute of Technology</i>	
	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 Meeting Room 1	
	<i>Particle Air Pollution Monitoring With Nuclear Analytical Techniques: Challenges and Opportunities</i>	Dieter Schwela, Visiting Scientist, Institute for Health and Consumer Protection, European Commission Joint Research Centre
	<i>Impact of Policy Interventions on Urban Air Quality in India: A Retrospective Analysis</i>	Sameer Akbar, Senior Environmental Specialist, The World Bank
	<i>Air Quality Management of Particulate Matter Emitted from Vehicular Sources in Delhi</i>	Pramila Goyal, Principal Scientific Officer, Centre for Atmospheric Sciences, Indian Institute of Technology
	<i>Framework of Local Air Quality Management in Malaysia</i>	Nor Azam Ramli, Lecturer, Universiti Sains Malaysia; Peter Brimblecombe, Professor, University of East Anglia, UK
	<i>Urban Versus Rural Air Pollution In Northern Vietnam</i>	Pham Duy Hien, Professor, Vietnam Atomic Energy Commission
SW	Public Participation and Awareness Raising for Air Quality Management	

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No.	Subject	Speaker
3	<i>Chairperson: Arif Pervaiz, Head Policy, International Union for the Conservation of Nature, Pakistan</i>	
	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.	

8 DECEMBER: 9.00 – 10.45 AM Meeting Room 2

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

SW 4	Using Routinely Collected Air Quality Monitoring Data for Health Research in Asia
	<i>Chairpersons: Robert O'Keefe, Vice-President, Health Effects Institute and Aaron Cohen, Principal Scientist, Health Effects Institute</i>
	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

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

SW 5	Non-Motorized Transport and Bus-Rapid Transit
	<i>Chairpersons: Karl Fjellstrom, Country Director for China and Bangladesh Institute for Transportation and Development Policy and Gary Haq, Research Associate, Stockholm Environmental Institute</i>
	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

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

8 DECEMBER: 9.00 – 10.45 AM Poolview Pavilion

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

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No.	Subject	Speaker
	<i>Delhi's High Capacity Bus System</i>	Rakesh Kumar, Project Scientist, Transportation Research and Injury Prevention Programme, Indian Institute of Technology, Delhi
SW 6	Surface Ozone and Its Impacts <i>Chairperson: Moti Mittal, Senior Scientist, Ohio Supercomputer Center</i>	
	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		
	<i>Air Pollutants, Human Health and Agricultural Yields: Economic Risk and Poverty Reduction in South Asia</i>	Moti L. Mittal, Senior Scientist, Ohio Supercomputer Center
	<i>Regional Pollution and Intercontinental Transport: Impact on Air-Quality in Asia</i>	Manish Naja, Researcher, Frontier Research Center for Global Change, Japan
	<i>Photochemical Smog Pollution in Jakarta, Indonesia</i>	Dollaris R. Suhadi, Post-Graduate Student, Universiti Putra, Malaysia
	<i>Prediction of Maximum Daily Ozone Levels Using Neural Network Models in Bangkok</i>	Le Hoang Nghiem, Doctoral Student, Asian Institute of Technology, Thailand
SW 7	Air Quality Modeling Theory and Practice <i>Chairperson: Akula Venkatram, Professor, University of California</i>	
	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		
	<i>Guidelines for Allocating Air Pollution Assimilative Capacity for Industrial Areas Located In Major Industrial Region</i>	Vilas Nitivattananon, Assistant Professor, Asian Institute of Technology
	<i>Policy for Air Pollution Control Strategy by Using the Air Pollutant Dispersion Model (PM10) in Surabaya</i>	Chamidha, Head of Air Laboratory, Environmental Department of Surabaya
	<i>Air Quality Modeling as a Vital Component in the Integrated Environmental Strategies (IES) Project in India</i>	V. Srinivas, Senior Faculty & Head, Air Division Technical Operations, Environment Protection Training and Research Institute
	<i>Performance of Dispersion Models in Urban Areas</i>	Akula Venkatram, Professor, University of California
SW 8	Indoor Air Pollution Management <i>Chairperson: Sumeet Saxena, Fellow, East-West Center</i>	
	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 in-door air pollution	
7 DECEMBER: 16.15 – 18.00 PM Pavilion Heights		
	<i>Indoor Air Quality for Poor Families: New Evidence from Bangladesh</i>	Susmita Dasgupta, Senior Economist, The World Bank
	<i>Emission of Polycyclic Aromatic Hydrocarbons and Particulate Matter from Domestic Cooking Using Coal</i>	Nghiem Trung Dung, Senior Lecturer, Hanoi University of Technology
	<i>Health Impact of Biomass Fuel Use in Rural India</i>	Twisha Lahiri, Assistant Director, Chittaranjan National Cancer Institute
	<i>An Integrated Evaluation of Indoor Air Pollution Based on Health Risks and Greenhouse Gas Emissions in Andhra Pradesh, India</i>	K. Balakrishnan, Professor & Head of Department, Environmental Health Engineering, Sri Ramachandra Medical College & Research Institute, Chennai
	<i>Standard Methods For Monitoring Indoor Air Pollution to Evaluate Improved Stove Programs: Plans, Protocols, & Progress</i>	Kyra Naumoff, PhD Student, University of California at Berkeley
SW 9	Air Quality Management in the Industrial Sector <i>Chairperson: Katherine Grover, Policy Analyst, Clean Air Markets Division, United States Environmental Protection Agency</i>	

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No. Subject Speaker

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

SW 10 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

SW 11 The Role of Inspection and Maintenance in Air Quality Management

Chairpersons: Jitendra Shah, CAI-Asia Secretariat, Lead Environmental Specialist, The World Bank and K.G. Duleep, Managing Director, Energy Environment Associates

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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No.	Subject	Speaker
	<i>Diesel Inspection & Maintenance – The Influence of Testing Strategies on Emission Reduction Outcomes</i>	Peter Anyon, Director, Air Quality Technologies Pty Ltd
	<i>On-road Emissions in Asia Measured by Remote Sensing</i>	Niranjan Vescio, General Manager, Environmental Systems Products Holdings Inc.
8 DECEMBER: 9.00 – 10.45 AM Diwan-e-aam II		
	<i>Diesel Vehicle Emissions Control and Its Emission Benefits in Hong Kong</i>	Matthew Tsang, Environmental Protection Officer, Environment, Transport and Works Bureau, Hong Kong, SAR
	<i>Approach Towards Development of an Effective In-Use Vehicle Emission Inspection For India</i>	Balraj Bhanot, Director, The Automotive Research Association of India
SW 12	Emission Factor Development for Asian Vehicles <i>Chairperson: Peter Anyon, Director, Air Quality Technologies Pty Ltd.</i>	
	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		
	<i>Instrumented In-Use Vehicles: A Versatile Tool to Measure Emissions</i>	Horst Preschern, General Manager, AVL Automotive Thai Co., Ltd.
	<i>Emission Factor Development in Thailand</i>	Panya Warapetcharayut, Director, Automotive Air Pollution Section, Pollution Control Department, Thailand
	<i>Estimation of Mobile Source Emissions in Bangkok Metropolitan Area, Thailand - Development of Driving Cycles and Emissions Factor</i>	Ryo Masutomo, Director, Transport Cooperation Research Institute, Japan Transport Cooperation Association
8 DECEMBER: 9.00 – 10.45 AM Diwan-e-khas III		
	<i>Sustainable Transport Indicators: From Raw Data to Indicators - Vehicle Activity Study, Shanghai China</i>	Changhong Chen, Professor/Director, Shanghai Academy of Environmental Sciences
	<i>Estimation of Emissions of Pollutants from Transport Sector in Indian Mega-cities</i>	Chhemendra Sharma, APN Liaison Officer, National Physical Laboratory, New Delhi
SW 13	Improving Fuel Quality in Asia <i>Chairperson: Leon Halliburton, Fuels Technical Manager, Shell Products East Zone</i>	
	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		
	<i>Linkages Between Stricter Emissions Standards and Fuel Quality: A Cost Benefit Analysis of Lowering Sulfur Levels in Gasoline and Diesel</i>	Michael Walsh, Independent Consultant
	<i>Producing Cleaner Fuels in Asia</i>	John Curtis, Director, Daedalus, LLC
	<i>Cleaner Fuels in Asia, the Role of Pricing, Taxation and Incentives</i>	Grant Boyle, Program Associate, United Nations University
	<i>An Overview of Fuel Quality Monitoring</i>	Liisa Kiuru, Director, Asia, International Fuel Quality Center
SW 14	Co-benefits of Local Air Quality Management and Climate Change Mitigation <i>Chairperson: Adam Chambers, Senior Project Leader, United States National Renewable Energy Lab</i>	
	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		
	<i>Co-benefits from Urban Transportation Strategies – Comparative Analysis of Local Emission Control Strategies vis-à-vis Greenhouse Gas Mitigation Strategies</i>	Sudhakar Yedla, Policy Researcher, Institute for Global Environmental Strategies

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No.	Subject	Speaker
	<i>Specific Transport Measures to Reduce Emissions In Hyderabad, India</i>	Yash Sachdeva, Additional General Manager (Urban Transport) RITES Ltd.
	<i>The Cities for Climate Protection Campaign Harmonizing Air and Climate Protection</i>	Emani Kumar, International Council for Local Environmental Initiatives - India
	<i>Panel Discussion: Strengthening of Co-benefit Approaches in Policy Making in Asian Cities</i>	Sudhakar Yedla, Institute for Global Environmental Strategies; Yash Sachdeva, RITES Ltd; Emani Kumar, International Council for Local Environmental Initiatives; Vaqar Zakaria, Managing Director, Hagler Bailly, Pakistan; Hu Tao, Policy Research Center for Environment and Economy, State Environmental Protection Administration, P.R. China

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

<i>Implementation of the Strategic Framework for Air Quality Management in Asia: A Way Forward</i>	Dieter Schwela, Senior Scientific Advisor, Stockholm Environment Institute, Stockholm, Sweden
<i>Establishing Frameworks for Effective and Efficient Air Quality Management at National and Local Levels</i>	Tim Chatterton, Research Fellow, Air Quality Management Resource Centre, University of the West of England
<i>Vehicular Pollution Control- Indian Perspective and Future Strategies</i>	Sanchita Jindal, Joint Secretary, Ministry of Environment and Forests
<i>Progress of Beijing in Control Vehicular Emissions</i>	Hao Jiming, Director, Tsinghua University, Beijing, China

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

<i>The Environmental Benefit Mapping Analysis Program, International Version</i>	Zachary Pekar, Health Scientist, United States Environmental Protection Agency
<i>Air Pollution and Contributions of Particulate Matter from Different Types of Diesel Vehicles in Sri Lanka</i>	Sugath Yalgama, Assistant Secretary, Ministry of Environment and Natural Resources; Nanda Senanayake, Additional Director, Natural Resource Management Center, Department of Agriculture, Sri Lanka
<i>Implementing a Clean Air Program in the City of Puerto Princesa, Palawan, Philippines</i>	Jovinee Sagun, Acting Assistant City Planning and Development Coordinator, City Government of Puerto Princesa, Philippines
<i>Integrated Air Quality Management in Indonesia</i>	Ridwan Tamin, Assistant Deputy For Vehicle Emission Affairs and Amelia Rachmatunisa, Head, Air Quality Monitoring Sub-division, Ministry of Environment, Indonesia
<i>Developing Integrated Emission Strategies for Existing Land-Transport (DIESEL) Project, Bangkok</i>	Mingquan Wichayarungsalidh, 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

<i>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</i>	Lynn Price, Deputy Group Leader, Energy Analysis Department, Lawrence Berkeley National Laboratory
<i>Assessing the Feasibility of Market-based Air Pollution Control: A Preliminary Look at the Indian Power Sector</i>	Mausami Desai, United States Environmental Protection Agency

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No.	Subject	Speaker
	<i>Using Market Based Instruments to Achieve Environmental Policy Goals: The Case of Cess on Coal</i>	Rita Pandey, Fellow (Associate Professor), National Institute of Public Finance and Policy, India
	<i>Sound Economic Incentives For CNG Buses in Metro Manila</i>	Jose Logarta, Action for Economic Reforms, Philippines
	<i>Environmental Property Rights, Payments for Environmental Services, and Budget Transfers: Tools for Controlling Cross-Boundary Air Pollution and Sand Storms in Western China</i>	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

<i>Diesel Vehicle Emissions in Asian Cities</i>	Mario Camarsa, Executive Director, Enstrat International
<i>Diesel Emission Control Technology for Retrofit Applications</i>	Timothy Johnson, Director - Emerging Technologies and Regulations, Corning Incorporated
<i>Retrofit Strategies to Reduce Urban Particulate Pollution</i>	Richard Kassel, Senior Attorney, Natural Resources Defense Council
<i>Retrofit Emission Technologies for Heavy-Duty Vehicles: State-of-the-Art</i>	Sougato Chatterjee, Manager - Application Engineering HDD & SSEC, Johnson Matthey
<i>Potential of Diesel Engine Emission Reductions</i>	Gerhard Ziegler, General Manager, R&D and Application, Motor Industries, Co. Ltd.

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