



IUAPPA Newsletter

The International Union of Air Pollution Prevention
and Environmental Protection Associations

April 2005

JAPAN CALLING

Preparations are now well advanced for the Union's next Regional Conference, to be held in Japan from 1-4 August. The organising team is led by IUAPPA's Japanese Board member, Koji Kitabayashi, with the support of both JUAPPA and JEMAI, with lead sponsors including the Japanese Federation of Electric Power Companies, the Japanese Iron and Steel Federation, and Johnson Matthey, the international environmental technology group.

Lead keynote speakers will include Professor Wang, previously Director of the Chinese Research Academy, and the leading Japanese industrialist, Teruaki Masimoto. The keynote speaker, to be announced shortly is expected to address the climate/pollution interaction, building on many of the themes opened up at the London Congress. Two recent 'Hopes' winners are also expected to give addresses: John Buccini, now head of Chemicals Division of UNEP, and Dr Hong, head of the EPA in Taiwan.

While the title is 'Clean Air and Environment in the Asian Pacific Area', there will be a special focus on two areas – on technology and on Urban Air Quality management. Particular interest is likely to be evoked by papers on recent work on 'heat island' effects, on which Japanese scientists have been taking an international lead.

Participants will have the advantage that the conference will be held in the Shinjuku area of Tokyo, which combines some of Tokyo's best modern architecture and hotels with the traditional entertainment area. The social and tours programmes make clear that this meeting will maintain the standards of hospitality and efficiency long associated with IUAPPA's Japanese member.

IUAPPA member organisations are asked to publicise the meeting widely to their members over the next few weeks, urging that abstracts now be submitted as soon as possible.

INTERNATIONAL ADVISORY BOARD

We are delighted to announce that Professor Yuan Tseh Lee, Dr Meinrat Andreae and Professor V (Ram) Ramanathan, have agreed to join the Union's International Advisory Board, recently established under the Chairmanship of Mario Molina.

Professor Lee, winner of the Nobel Prize for Chemistry in 1986, is President of the Academia Sinica of Taiwan, and a long-term friend of the Union. He will be well-known to many of our members, not least through his association with the Hopes for the Future Awards.

Both Dr. Andreae and Professor Ramanathan are internationally celebrated atmospheric scientists and share a particular interest in the interaction of climate change and pollution – an area of increasing concern for IUAPPA, and one where their guidance will be particularly valued.

Among many other commitments, Dr Andreae, Director of the Max Planck Institute for Chemistry in Germany, collaborates with a sizeable number of scientific institutions worldwide and is a member of the scientific steering committee of the international program "Large Scale Biosphere Atmosphere Experiment in Amazonia (LBA)".

Professor Ramanathan is Professor of Climate and Atmospheric Sciences and Director of the Center for Clouds, Chemistry and Climate at the University of California San Diego. Prof. Ramanathan led the Atmospheric Brown Cloud Study for UNEP – possibly the most significant development in atmospheric science and policy in the last decade.

Global Forum Moves Forward

The Forum, established last year by the Union and the Stockholm Environment Institute, has made rapid progress over the past few months, with sufficient funds now guaranteed to cover its programme for the current year and its further expansion over the next few years.

A summary of recent developments can be found on pages 2 and 3, but a full progress report has recently been circulated to members and others interested. Further copies can be obtained from the Secretariat.

ON OTHER PAGES

IUAPPA news

Hemispheric Pollution – Task Force established

IUAPPA Regional Meetings – Tokyo, Istanbul

Members News – APPA, VVM-CLAN, AWMA,

Policy Updates

CAFE

Emissions from Non-road Mobile Machinery

Public Health & Air Pollution in Asia Program

Emissions from Shipping



In spite of the darkening prospects on climate change and on global eco-system damage and the continuing severe impacts of air pollution, particularly in Asia and Africa, 2005 does not so far appear likely to be marked by more effective action on the global environment.

Nevertheless, the last three months have been an exceptionally busy, and in a number of ways a successful period for IUAPPA, with the further development and consolidation of the Global Atmospheric Pollution Forum; further progress with our seminar programme on transport in mega-cities, particularly the prospects for demand management; our new commitment to take forward issues related to the interaction of climate change and pollution; our two major regional conferences this year, and our involvement in a number of other initiatives and meetings.

Global Atmospheric Pollution Forum

As many members will have seen from the recent Progress Report, the Forum is now well established. The Steering Group now includes representatives from most of the relevant international bodies, including the Convention on Long-Range Transport of Air Pollution, UNEP, and the Clean Air Initiative-Asia. New resources have been found to support its first year of operation, and we record our particular thanks to the US EPA and to Environment Canada.

The programme for the next year will be a particularly busy one, with at least three major meetings, and the planned publication of a comprehensive review paper on Hemispheric Pollution. Meanwhile the Secretariat, in conjunction with the Stockholm Environment Institute, is assembling the draft development plan and 5-year work programme.

Information about the Forum is now distributed to a wide readership, but we want to ensure that it reaches the maximum number of interested people. If you know of interested organisations or individuals, please draw it to their attention.

Wider Links in Asia

IUAPPA has always had strong organisations in Taiwan, Japan and Korea and valuable links with Hong Kong and Singapore, but in countries elsewhere in the continent our links have been much less strong. Pollution issues are so important, and the atmospheric sciences progressing so rapidly in the continent, that we must ensure that it plays its full and proportionate part in the Union. We are particularly keen to strengthen and consolidate our links with India, Thailand and the Philippines. We welcome the effective collaboration we have now developed with the Clean Air Initiative-Asia.

In December the Director General attended the Better Air Quality Conference in Agra to help promote IUAPPA's work in the continent.



Delhi

This year's regional conference in Tokyo and the next World Congress in Brisbane – with its focus on the Pacific Rim – will offer further opportunities.

Transport and Air Quality In Mega-Cities

In the last two years the Union has held the first two of its series of seminars for invited participants on the problems of transport and air pollution in mega-cities. Last year's meeting, in Mexico City, proved particularly important.

The International Board is keen to maintain this programme, and thought is being given to the next steps. Johnson Matthey are sponsoring a special session on cleaner transport in cities at the Tokyo Conference, and in Istanbul we shall, as reported elsewhere, be linking with the EMBARQ programme of the World Resources Institute for a special side event on technology and demand management aspects of transport in cities. The rapid growth of Istanbul, and the

challenges this is creating, will make this a particularly important meeting.

We are keen however to repeat the format of the previous special two-day seminars for invited participants, and are exploring possible times and venues. Given that there will be meetings this year and next in Europe and Asia, and to maintain continuity in the programme, thought is being given to the possibility of a further meeting in Brazil, for which Sao Paulo is likely again to be the most appropriate location. However any further meeting is unlikely to be held before November at the earliest, and a further announcement will be made shortly.

Climate Change and Pollution

From the sessions at the London Congress it is clear that this is one of the most critical environmental issues for the next decade. The International Board is giving thought to how the Union might most usefully contribute to debate on the issues, and would welcome views from members.

HEMISPHERIC POLLUTION



GLOBAL ATMOSPHERIC POLLUTION FORUM

On 1 June, partly as a result of recent efforts by IUAPPA, a notable meeting will take place in Brussels. It is the first meeting of a task force on hemispheric pollution established by the UNECE Convention on Long-range Transboundary Air Pollution. In a small part at least it reflects IUAPPA's persistent calls in recent years for greater efforts to co-ordinate regional networks to share experience and problems and begin to address hemispheric and global air pollution issues.

Such a development could not have been contemplated 10 or even 5 years ago. Impacts on the UK and Europe from US emissions appeared relatively trivial.

Not any longer. Current emissions now contribute significantly to pollution levels that exceed air quality objectives at various locations throughout the Northern hemisphere. While local or regional emissions and environmental conditions are responsible for most of these exceedances, air quality is also influenced by emissions, transport and transformation processes at the inter-continental and hemispheric scales (UNECE, 2003). There is now well-documented evidence for the intercontinental and hemispheric transport of ozone, particles, and their precursors, as well as mercury and persistent organic pollutants (UNECE, 2003). In Europe imports from North America, though still small in absolute terms, have proportionately assumed greater significance as domestic European sources have abated. European emissions could also be causing impacts in Asia and North America.

It is now clear that the projected increase in emissions from Asia could have a very significant impact on the ability of states within the US to reduce ambient concentrations of pollutants to the extent that they are now legally required to do. Equally the pathways for Saharan Dust are now becoming evident. The presentation by Jim Meagher of NOAA, at the London Congress, showed how much our understanding has moved forwards in ten years.

The issue of hemispheric pollution can therefore no longer be avoided. On the initiative of the United States, LRTAP has established the Task Force, which will be jointly chaired by the US and the EU, to explore the issues. In its early stages it will be avowedly a scientific body, addressed simply to clarifying the scientific position. The view of most of those initiating the project is understandably that it will be a considerable time before policy and abatement options can realistically be explored.

What view should IUAPPA take? As a first step it has warmly welcomed the US initiative, expressing particular satisfaction at the wide interest that the project has evoked. Through the Global Atmospheric Pollution Forum we shall be active and supportive observers – and so far as practicable – contributors to the proceedings.

We are concerned, however, that the initiative get started on the right basis. Discussions within the Forum suggest a number of considerations which should be taken into account:

- It is important, as we believe is intended, that the meetings be open to all Northern Hemispheric countries with an interest.

Indeed it may be desirable for the body gradually to assume a wider identity beyond UNECE;

- UNECE must however start its work with an open dialogue with the other established regional air pollution networks in the hemisphere (e.g. EANET, the ASEAN Haze Protocol and the Malé Declaration in Asia) and emerging networks in regions such as the Central Asian Republics, South America north of the equator (IANABIS), the middle east and parts of northern Africa;
- While it is wise to recognise that progress to abatement options and policy agreements is unlikely to be rapid, it would be wrong to be too pessimistic. As experience has been gained the time taken for international environmental agreements has tended to reduce and the POPs agreements, within UNECE and the UNEP, show what can be done. UNECE has been through a learning experience that it should not need to repeat.

A final question is what IUAPPA can do to help progress. One step is for the Forum to establish an informal network of scientists and policy makers to monitor developments and contribute to debate. Another is for the Forum to publish, around the time of the first meeting of the Task Force, a preliminary review paper setting out the evidence and the issues, and, if possible, some of the policy options which might in due course open up.

Any IUAPPA members interested in contributing to the work of the Union and the Global Forum in this area are asked to contact Richard Mills: rmills_iuappa@yahoo.co.uk

IUAPPA News continued

Venue for the 15th World Congress

One of the matters for decision at the next meeting of the International Board, in Tokyo, will be the venue for the 15th congress. With previous congresses held in Australasia, Europe, Asia and Africa, the Americas have appeared an obvious choice. One possibility under consideration by AWMA and our other colleagues is Mexico City. It is important that views from member organisations on this or other options be available by the next Board meeting.

Changes at IUAPPA Headquarters

In view of other demands on his time, in particular from our Global Atmospheric Pollution initiative, the Director General stood down at the end of January 2005 from his post as Secretary General of NSCA. He has now been appointed a Vice-President of the Society, and IUAPPA's links with the Society will be unaffected. Headquarters services will continue from the Brighton office, with the Director General and Loveday Murley regularly available there.

The new Secretary General of NSCA is Mr Martin Joseph, also previously with the UK Environment Department. He looks forward to taking an early opportunity to meet IUAPPA colleagues.

IUAPPA Board Meeting

As previously advised, the next Board Meeting will take place on Monday 1 August at the Kogakuin University. A preliminary agenda will be circulated at the end of May.

Air Quality Modeling, Volume II: Theories, Methodologies, Computational Techniques, and Available Databases and Software

This is the second volume in a series on air quality modelling published by A&WMA and the EnviroComp Institute. The series covers all aspects of computer simulation of air pollution and related atmospheric phenomena.

Volume I, published in 2004 focused on the fundamentals of modelling; Volume II focuses on more advanced topics, such as Lagrangian modelling, chemical transformations in the atmosphere, and indoor air pollution modelling. Both volumes are available in book format and CD-ROM, and the series also has its own Web page, www.envirocomp.org/aqm, which readers are encouraged to visit for additional information.

Special! IUAPPA members are eligible for discounted pricing on both volumes. The normal retail price for each volume (in US dollars) is \$169/book, \$109/CD. IUAPPA members can order them for \$149/book and \$99/CD, or \$211 for a book/CD combo.

To order Volume I or pre-order Volume II, contact A&WMA's Bookstore Coordinator by e-mail (ghenning@awma.org), fax (+1-412-232-3450) or post (One Gateway Center, 3rd Floor, 420 Ft. Duquesne Blvd., Pittsburgh, PA 15222, USA). Don't forget to mention membership of IUAPPA when ordering.

IUAPPA

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Production Editor – Loveday Murley

Published by
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Environmental Protection Associations
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Design by Sarah Haybittle

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March 2005

IUAPPA Regional Events

Clean Air and Environment in the Asian Pacific Area 2-4 August 2005, Tokyo, Japan

See front page for programme and speakers; for details of how to register etc, see www.jemai.or.jp or email cleanair2005@jemai.or.jp

3rd International Symposium on Air Quality Management at Urban, Regional and Global Scales 26-30 September 2005, Movenpick Hotel, Istanbul, Turkey

The objective of this symposium is to bring together those working in the field of air quality management, including scientists from universities, research organisations, government and industry. The programme will cover all aspects of air quality management and air pollution control, with papers also invited on specific topics including: acid rain, ozone problems, industrial emissions, toxic and hazardous pollutants, risk management, indoor air pollution and dust-storm generation and transportation. For the full list see the symposium website.

At the conference IUAPPA will be joining with the EMBARQ programme of the World Resources Institute to host a special full day seminar on cleaner transport in mega-cities, with a particular focus on demand management and its interaction with new transport technologies. EMBARQ has just completed a major programme introducing cleaner fuels to Mexico City and is reviewing options for cities elsewhere in the world. Istanbul is particularly relevant in this respect, because current transport and accessibility problems are being greatly exacerbated by the continuing rapid immigration into the city. Details of the programme will be available shortly.

A special session is also being arranged on Emissions from Shipping – further details will be available from EFCA in due course (j.vanham@plant.nl)

Further details of the conference and registration details available at:
<http://www.deu.edu.tr/tuncap/aqm2005>, or email incecik@itu.edu.tr

Member Events

A&WMA's 98th Annual Conference and Exhibition 21-24 June 2005, Minneapolis, Minnesota

The conference theme is "Exploring Innovative Solutions"; as well as the keynote program, the conference includes over 150 technical sessions, and also incorporates the 7th International Urban Air Quality Forum – this year's theme is the impact of fuel choices on the environment in developing countries. More details www.awma.org/ACE2005

Non-CO₂ Greenhouse Gases 4-6 July 2005, Utrecht, Netherlands

VVM-CLAN is well on schedule with the preparations for its Fourth International Symposium on Non-CO₂ Greenhouse Gases (NCGG-4); some 200 presentations have been offered – a record number for the event which dates back to 1993, and possibly due to increasing interest in this area, following the recent ratification of the Kyoto Protocol. The connection with IPCC continues as witnessed by the involvement of Bert Metz, co-chairman of IPCC Working Group III, who will co-chair NCGG-4 together with Paul Crutzen. The proceedings and a Special Issue on the symposium will be available as reference for IPCC's Fourth Assessment Report.

NCGG-4 will, more than previous symposia, focus on implementation of policy developments. In line with this an exhibition during the symposium will demonstrate technological progress in controlling or avoiding emissions of NCGGs.

Further details of the symposium, together with registration details, can be found on www.ncgg4.nl, or email info@ncgg4.nl for a copy of the preliminary programme.

In this section – which we hope will be a regular feature of the Newsletter – we aim to provide an opportunity for members to highlight key developments in research or policy which they believe are of significance for the Union's goals, or relevant to its priorities, and to update members on topics addressed in previous IUAPPA Conferences.

Here members report on recent developments in EU Air Quality Policy; prospects for controlling emission sources which have previously been considered relatively unimportant but which are now becoming more central to policy; and building upon discussion at the Congress, progress in the debate about health effects in Asia.

CLEAN AIR FOR EUROPE STARTS MOVING

The European Directorate General for Environment is currently preparing a Thematic Strategy on Air Pollution, on which it is hoped progress will be rather more rapid than during the first five years of the Clean Air for Europe Programme (CAFÉ).

Involvement of EFCA and IUAPPA

The IUAPPA Regional Conference in Dubrovnik in October 2003 included an analysis of the CAFE Programme prepared by an NSCA task force, which also addressed the system of limit values and the way it operates. As a result EFCA – after adoption of a resolution – approached the European Commission to offer its assistance in discussions on CAFE. The Commission in response invited EFCA to jointly organise a workshop in Brussels on specific elements of CAFE, that would provide an opportunity to

give input with respect to the present regulation.

As participants of the London World Congress may remember one of the Special Conferences there was dedicated to Managing Air Quality with specific reference to CAFE. It provided a worldwide review of approaches and as such provided valuable input for the Brussels workshop the following week. In view of its interest EFCA became a member of the CAFE Steering Group.

Improving CAFE

To meet the shortcomings of the limit value system it has been proposed to supplement it with a gap closure approach. The ultimate goal would be to avoid exposure above the natural background, to be reached in stages, and would complement the National Emission Ceilings approach which is being applied in the European Union. Rather than monitoring air quality as such it would require monitoring of exposure on a population weighted basis, which is seen as a better measure for health protection

throughout Europe. In a memorandum to the Member States EFCA has recommended that work on developing such a monitoring instrument should be started.

Thematic Strategy on Air Pollution

Though the Thematic Strategy is still in its early stage of testing new elements among stakeholders, initial proposals show that development along the lines given above is being considered. Moreover, a recent IIASA study indicates that a different approach towards air quality will be more cost-effective. Another important issue relates to fine particulate matter, where a move to addressing PM 2.5, in addition to or instead of PM10, seems unavoidable (though its practical implementation may take some time). The PM policy is directly connected with a proposal for national emission ceilings for particulate matter which is under consideration. The proposals, which may address an appreciable number of other topics, are to be finalised in May for adoption by the European Commission. More information: j.vanham@plant.nl

PUBLIC HEALTH & AIR POLLUTION IN ASIA

The Public Health and Air Pollution in Asia program (PAPA) was initiated by the Health Effects Institute under the umbrella of the Clean Air Initiative for Asian Cities (CAI-ASIA) to help provide high quality, independent science to inform air quality decisions in the Asia region and to contribute to key upcoming worldwide decisions by WHO and others. Some recent results were discussed at the London Congress.

PAPA's current priorities include ongoing studies of the acute effects of air pollution and health in Bangkok, Hong Kong, Shanghai and Wuhan, and new companion studies in the early stages of implementation in Chennai, Delhi and Ludhiana in India. Taken together these studies will help extend understanding of the impact of air pollution on health across major Asian population centers. PAPA has also recently completed a pilot study of long term air pollution effects in the elderly in Guangzhou, China.

Further details of PAPA's current studies can be found in the spring issue of "PAPA Progress" – http://www.cleanairnet.org/caiasia/1412/articles-48844_PAPA4.pdf

ENVIRONMENTAL EPIDEMIOLOGY & EXPOSURE

Organised by the French Environmental Health Agency, this conference, to be held in Paris from 2-6 September 2006, will focus on the importance of the directly or possibly "atmospheric" related topics within various scientific expert groups, including: air pollution and the urban environment; indoor air, sources of exposure and risk management; health impacts of global climate change; cancer and the environment; health impact assessment methodologies; population exposure to pesticides and persistent organic pollutants; social and political perception of risk; environmental justice.

IUAPPA members will recall that at the Board meeting in London last August, it was agreed a good idea to facilitate links between exposure and epidemiology experts and the IUAPPA community, which is more focused on pollution assessment and air quality management policies. To this end, consideration is being given to organising an IUAPPA meeting to take place at the same time as the above conference. IUAPPA has also been invited to join the International Scientific Advisory Board for the conference.



ACTION ON NON ROAD MOBILE MACHINERY EMISSIONS

In many countries road transport accounts for a large proportion of national inventories for both NOx and particulate pollution, despite the fact that over the last twenty years emissions from road transport have come under increasingly stringent control; although each individual vehicle delivers a fraction of the pollution load of those of the mid-1980s, the problem is caused by the ever increasing number of vehicles.

However, there are internal combustion engines in town and cities that have changed very little over the last twenty years and whose specific emissions are correspondingly high. These are the engines used for non road applications, such as tractors, earth movers, lifts and generators. With the increasing pace of urban renewal, such non road mobile machinery (NRMM) is becoming more common and the emissions it produces more apparent. Recent studies, by the Building Research Establishment in the UK and by NESCAUM in the USA, have contributed to an understanding of the levels of emissions from this equipment and its impact on ambient and work place air quality.

There are, however, solutions to the problem. Diesel Particulate Filters (DPFs) can be retrofitted or supplied with equipment and a range of NOx reduction technologies, including Selective Catalytic Reduction (SCR) is available. Indeed, in Switzerland, control of emissions from construction equipment is mandatory and in Europe a new Directive will implement stringent standards.

The construction industry can also play a major part in controlling emissions from NRMM: an agreement between planning authorities and contractors for a major construction project in Boston, Massachusetts – the “big dig”, a scheme to bury the sprawl of urban motorways under the city – required the use of DPFs for all site equipment. This made a significant difference



and a similar scheme has been adopted for the World Trade Centre reconstruction project.

In the UK, an initiative sponsored by the NSCA and the Environment Industries Commission provides a national forum to consider how emissions from NRMM can be reduced at an earlier stage. PRECIS (Partnership in Reducing Emissions from Construction Industry Sites) brings together the automotive and environmental technology and petroleum industries, central and local government and environmental interest groups. So far, agreements made through the PRECIS network show considerable promise. Equipment used in construction sites in the Thames Gateway development will use low sulphur diesel from this year and be fitted with DPF from next.

This is encouraging evidence that the industries and authorities can work together to produce a better environment by tackling emissions from NRMM. However, there is an urgent need to quantify the benefits from the control of NRMM emissions. The air quality case depends on good analysis of the added burden of pollution from this sector and this in turn depends on good inventories of equipment, accurate emission factors and state of the art air quality modelling. In the UK, the Government has made a good start by commissioning an inventory of equipment used on construction sites. The urgent need now is to join this to the other pieces of data needed to make the assessment.

IUAPPA member organisations may care to consider this emerging air pollution source and to consider cooperation in assessing its significance in urban air quality.

More information: John Murlis john.murlis@btinternet.com

SHIPPING EMISSIONS MOVE UP THE AIR POLLUTION AGENDA

Ships currently produce about half as much SO₂ as land based sources and about a third as much NOx. By 2010 it is expected that ships will emit about as much SO₂ as land based sources and about two-thirds of the NOx, making them a major pollution source. However, ships are highly carbon efficient as a transport mode, up to four times more efficient than road transport. There is clearly considerable potential for shipping provided that it can manage the impacts it has on the environment at a regional and local scale.

The International Maritime Organisation's MARPOL Convention, Annex VI, contains measures to limit air pollution from ships, and comes into force in May this year. It provides a cap on sulphur content of marine fuels (4.5% Sulphur), arrangements for special areas where the cap can be reduced (to 1.5% Sulphur) and NOx limits for diesel engines.

The NOx limit and the overall sulphur cap are not expected to make major differences to the emissions inventory, though they will bear down on some grossly polluting vessels. The special area provision, though, is expected to reduce sulphur emissions, by about half. Special areas, known as SECAs (SOx Emission Control Area) have been declared for the Baltic and for the North Sea and Channel and are under consideration for the Western seaboard of North America. The European Union has considered shipping emissions and has set sulphur limits in an amending Directive 1999/32/EC which is expected to be agreed later this year.

The Shipping industry recognises the need to improve environmental performance. An international consortium of marine industries, SEAA^t is keen to encourage legislators to consider a range of means of reducing the impacts of ships on the environment, including emissions trading schemes.

Technological developments are encouraging. NOx reductions technologies are available and fitted to many ferries operating in the Baltic. There are trials of sulphur scrubbers on cross channel ferries.

For the long term, there is every prospect that emissions from ships can be reduced cost effectively. As further reductions in emissions from land based sources are expected to carry high marginal costs, this will make it more attractive for policy makers to focus on ships for the next round of measures to protect human health and the wider environment. More information: john.murlis@btinternet.com