

AIR QUALITY

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BULLETIN

MODELLING

Spotlight turns on modelling

A report on ozone modelling has revealed continued efforts to improve the 'fitness for purpose' of large scale models used to support Defra policy.

An AEA report into ozone modelling reveals the work going on behind the scenes to try and bolster confidence in the models following a 2007 report found "room for improvement" in current models. That study also found that it would be hard to defend the models against criticism as they have not been subjected to peer review.

Defra uses a number of modelling techniques to underpin policy analysis. For instance action on solvents and other ozone precursors needs to be cost effective, and the only way to show that is modelling impacts of solvent reduction on

ozone concentrations.

Defra currently relies on two ozone modelling approaches – the Pollution Climate Mapping (PCM) empirical modelling approach and the Ozone Source Receptor Model (OSRM). The PCM (educated guesswork type) model does better than the OSRM (techie) model, the latter has underestimated ozone in high ozone years and overestimated it in low ozone years.

The difficulties prompted a review by modelling expert Dick Derwent, and the report is now being circulated for comment. Derwent explained to *AQB*: "Defra uses ozone modelling for two purposes. The first is to replace monitoring which they are allowed to do by the

Commission if the model is good enough. The second is to look at the impacts of policies and emission projections.

"Paul Monks of the University of Leicester did a review of Defra modelling 18 months ago and was fairly critical of the OSRM. Despite many years funding, there is still no peer-reviewed publication describing the OSRM or its applications.

"Neither is there a literature report dedicated to the model to look to see how it works and where all the input data come from. What is in the model is actually quite reasonable and it performs quite well – but you cannot defend the OSRM from the criticism of transparency.

● Continued page 2

POLITICS

Elections prompt air quality enthusiasm

In the run up to the European and local elections, Lib Dems have pledged they will ensure the UK complies with European laws on air quality.

They quote data from an EU study that suggests that 24,000 UK citizens die prematurely every year due to bad air quality. In London they say 4,400 die every year – four times greater than previously admitted by the Mayor of London.

Liberal Democrat energy and climate change spokesman Simon Hughes said: "Liberal Democrats want the UK to fully comply with air quality laws in time for the 2012 Olympics. Air pollution is a silent killer. Every year, thousands of people across

Britain are having their lives cut short because our Government is dragging its heels on cleaning up the air we breathe.

"Meeting European targets on air pollution is not optional – it's a matter of life or death. It is high time Britain cleaned up its act."

Epuk welcomed the commitment: "The statement marks the first time one of the main three political parties has made a firm commitment on air quality linked to a deadline. The chosen date of the deadline is particularly evocative – athletes are especially sensitive to air pollution due to the quantity of air passing through their lungs, and air quality was a worry at last year's Beijing games.

"In 2012 the lungs of the world's top athletes will be breathing the UK's air, and it is absolutely imperative that we meet our air quality standards by this date as a very minimum," said Epuk, "We now call on the other political parties to make a similar unambiguous commitment to ensure that the health benefits of clean air are captured across the UK as a tangible health benefit for all."

Simon Birkett of the Campaign for Clean Air in London also urged other political parties to make the same national commitment as that made by the Lib Dems – ie "the UK fully complying with air quality laws in time for the 2012 Olympics".

IN BRIEF

USAs delayed

Late guidance and the move to unitary authorities has been blamed for the delays in getting updating and screening assessments in on time. Defra has granted extensions to some local authorities.

Updating and screening assessments were due to have been submitted by the end of April but the detailed guidance needed to complete them was published very late (*AQB March p8*).

The University of the West of England air quality helpdesk told *AQB* that to date, it had received 103 updating and screening assessments (approximately 25%). "This submission rate is similar to what we have witnessed in previous USA years," it added.

"Due to the delay in the publication of the technical guidance, which included changes to the USA's structure, new sources to be considered and changes in some screening criteria, a delay in submissions was expected as local authorities and consultants needed time to get up to speed with the updates.

"Of the USAs that have been submitted to date, the vast majority appear to be making use of USA template documents and also over 90% of the USAs received to date have been submitted via the report submission website.

"Feedback has been positive from both local authorities and consultants on this new system and the USA template, and this is very encouraging."

● The reporting website can be viewed on www.airquality.org.uk.

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Website review

Air Quality Bulletin will be repeating its popular website review this summer.

Don't let the usual suspects win again – start sprucing up your site!

Ozone: cont. from p1

“Defra has decided that it needs to evaluate its models more carefully. We have put together a model inter-comparison protocol to help the modelling community to build better models and test them more rigorously.”

This protocol *Evaluating the performance of air quality models* says: “This report provides basic advice concerning what should be considered as ‘best practice’ for air quality model evaluation. Protocols are provided for ground-level ozone, acidification and eutrophication and urban air quality modelling. Each evaluation protocol poses three general questions:

- Is the scientific formulation of the model broadly accepted and does it use state-of-the-art process descriptions?;
- Does the model replicate observations?;
- Is the model suitable for answering policy questions and fulfilling its designated tasks?

“The protocols do not in themselves answer these questions but exist merely to elicit information from each air quality modelling team to allow Defra to form a view on whether a particular model is fit-for-purpose or not.”

Some air quality campaigners are concerned that Defra may choose a model that understates air pollution problems in the UK (*AQB May p3*).

- *Modelling of tropospheric ozone annual report: 2008*
www.airquality.co.uk/reports

Ozone progress

AEA has compiled a report to Europe on the UK progress on ozone.

The report notes that no UK zones exceeded the max daily 8hr target value, or the AOT target value. However 41 zones (mostly based on measurements rather than modelling) will exceed the long term daily 8hr mean objective, and three zones will fail the AOT40 long term objective.

- *UK and Gibraltar air quality modelling for annual reporting 2007 on ambient air quality assessment under Directives 96/62/EC and 2002/3/EC relating to ozone.*
www.airquality.co.uk/reports

LONDON

Mayor hints at rethink on LEZ

London Mayor Boris Johnson has set out his thinking on low emission zones in his formal review of the transport strategy. This strategy could provide some hints as to the direction of the forthcoming revamp of the London air quality strategy.

Johnson has been heavily criticised for effectively cancelling the third phase of the low emission zone. He has ‘suspended’ the extension of the controls to vans, minibuses and other small commercial vehicles (*AQB February p3*).

The transport strategy statement of intent sets out the foundations upon which the Mayor’s transport strategy will be built over the coming months. It forms a framework for developing the new strategy and contains potential policies and proposals which could be developed further, setting the scene for a full draft of the strategy which will be consulted on in the autumn of 2009.

The consultation says: “The forthcoming Mayor’s air quality strategy will contain more detailed proposals and will

consider any potential air quality impacts of the removal of the western extension of the congestion charging zone or the suspension of phase three of the LEZ as part of the broader London context.”

More specifically on air quality, the statement of intent says the Mayor will:

- Introduce or promote stricter performance standards for vehicles controlled, procured or regulated by the Mayor, GLA group and/or other public sector bodies (eg public transport vehicles, taxis, other vehicles contracted to or operated by such organisations) to reduce emissions from these vehicles;
- Introduce initiatives to incentivise the purchase or use of cleaner vehicles (eg through car clubs), the scrapping of older, more polluting vehicles, and/or the uptake of electric vehicle technology, further railway electrification;
- Promoting behavioural changes to smooth driving techniques, better maintenance and operating regimes (eg reducing vehicle idling or

ground-based aircraft emissions at airports) to reduce vehicle emissions;

- Targeted physical measures at air quality hotspots to reduce emissions and improve local air quality with a particular focus on achieving improvements in health outcomes (eg around schools);
- If required to address the challenge, using further emissions control schemes (eg LEZs) to include charges or restrictions on movements for vehicles that do not meet minimum emission standards.

The latter point appears to open the door to new, more targeted low emission zones as demanded by the Campaign for Clean Air in London, and more recently the London Assembly (*AQB May p3*). The targeted zone would focus on areas where there is particularly poor air quality rather than the broader M25 area which the current zone covers.

- *Transport Strategy Statement of Intent* www.london.gov.uk/mayor/publications/2009/05/transport-strategy.jsp

HEALTH EFFECTS

Europe can rely on US death rates

A large Health Effects Institute study of Dutch residents has confirmed that US pollution risk estimates can be used in Europe.

A multi national team of researchers led by Bert Brunekreef studied a cohort containing 120,852 subjects, who were 55 to 69 years of age in 1986. During the follow-up period from 1987 through to 1996, there were 17,674 deaths from natural causes within this cohort. They found a 13% increased mortality risk from breathing black smoke, and a 7% raised risk for living near a busy road.

This impact is less than an earlier pilot study – but similar to findings from the large American Cancer Society study, suggesting those findings can be applied to Europe.

Researchers commented: “The American Cancer Society and Harvard Six Cities studies

found stronger associations with cardiovascular mortality than with respiratory mortality, but little association with non-cardiopulmonary mortality. In contrast, in the full-cohort study, this latest work found higher risks associated with respiratory mortality than with cardiovascular mortality, although the results were less certain than those in the other studies.

“These three studies all found associations between air pollution and lung cancer mortality (although the associations in the current study were not significant).”

The application of the Cancer Society and Harvard Six Cities analysis outside of the United States involves the assumption that U.S. results can be translated to other populations. Given the possibility of differences in toxicity and

vulnerability that may exist between areas and populations, this assumption may be questioned. The Dutch cohort results in the current study, together with other cohort evidence emerging from Europe, therefore provide valuable evidence of adverse effects of air pollution on life expectancy in that Europe.

“Further, because the estimates from this Dutch cohort are similar to those of the American Cancer Society Study, the use of the latter in European impact assessments to date appears to have been reasonable,” it concludes.

- *Effects of long-term exposure to traffic-related air pollution on respiratory and cardiovascular mortality in the Netherlands: The NLCS-AIR study* can be viewed on the Health Effects Institute website www.healtheffects.org

PUBLIC INFORMATION

This year's first warning issued

In early June, Defra issued its first smog alert of 2009.

Moderate ozone levels were recorded prior to the warning across much of the UK and moderate and high ozone levels were forecast. But Simon Birkett of the Campaign for Clean Air in London has done his own analysis and found inconsistencies in policy and questioned whether an alert should have been issued earlier in the year.

"The Campaign for Clean Air in London is pleased that the government is continuing its earlier practice of issuing summer smog alerts when air quality is poor. We wrote to Lord Hunt earlier this year after no alert was issued during a worse still summer smog which occurred during the G20 summit meetings in London in April.

"In that letter CCAL urged the government to continue issuing smog alerts when necessary and to update its alert bandings.

"The current Air Pollution Index was developed by the Committee on Medical Effects of Air Pollutants (COMEAP) and reviewed in 1999/2000. In CCAL's view, the index is hopelessly out-of-date since air pollution can remain in the low band all year but still breach

legal standards. This is a very confusing message for the general public.

"Clean Air in London welcomes the government's openness in this announcement which attaches a research report showing that during London's summer smog episode in August 2003 there were a total of

between 46 and 212 premature deaths from ozone and 85 from dangerous airborne particles.

"This is a timely reminder of the importance of complying fully with European Union air quality laws and of the amount that needs to be done to improve air quality by the time of the London 2012 Olympics.



Air quality minister Hilary Benn (left) has visited ERG's air pollution unit (seen here with ERG's Gary Fuller).

The visit came ahead of the announcement of a huge new joint pollution research body, the £5M MRC-HPA Centre for Environment and Health which will be based at Kings College and Imperial College London (see below).

RESEARCH

Kings and Imperial cooperate on air

A joint environment centre has been set up to focus research on the environment, including air quality.

Kings College London and Imperial will jointly run the Centre for Environment and Health. The new centre will analyse the health of people across the UK and how this is affected by aspects of the environment. It will particularly focus on vulnerable people, including children and the elderly, and how environmental factors outside their control could be increasing their risk of respiratory problems, heart disease and cancer.

The centre is core funded by the Medical Research Council and the Health Protection Agency, with the two universities funding new posts

and studentships. Its researchers will be working with the HPA so that if their work reveals a new health risk, the HPA can take account of the centre's findings in its advice to government.

Professor Frank Kelly from King's College London will be the deputy director of the new centre. Kings's ERG will continue to operate as it does currently. Projects planned at the new centre include:

- A study of people living near London's Heathrow airport, exploring how air and noise pollution can affect people's health. The research will analyse the effects of living near road traffic from airport users as well as aeroplanes. Current evidence suggests that air pollution and noise affect the

cardiovascular system in different ways. Building on existing work, the new study will look at the effects of exposure to both forms of pollution together;

- A study exploring whether London's low emission zone, which was introduced in 2008 to improve London's air quality by reducing diesel fumes, has a beneficial effect on the health of people living and working in the Greater London area. The low emission zone targets large diesel-engined vehicles, such as lorries. It requires the most individually polluting vehicles travelling in the Greater London area to either meet specific emissions standards or pay a daily charge.

- website www.environment-health.ac.uk

IN BRIEF

Sussex web update

The Sussex Air Quality Partnership (Sussex-air) has launching its new website (www.sussex-air.net) which provides new Google mapping of near-real-time data from the Sussex-network accessible to the public. The new website will have information on pollution levels, health information, emissions data (including climate change indicators), pollution effects and what the public can do to help.

In addition Sussex-air also provides the airAlert service for Sussex (www.airAlert.info). This is a free air quality alert service for asthma sufferers and people with other respiratory conditions, to help people manage their health.

Nigel Jenkins, project development officer for Sussex-air said,

"It is a great opportunity for the Sussex Air Quality Partnership to launch its newly revamped website. We have near-real time data which informs people and helps us forecast alerts through our airAlert service. The Sussex authorities maintain a lot of monitoring sites in Sussex, but need support from central government (Defra or DoH) to assist with delivering such services that can benefit many vulnerable people.

"The airAlert service has the potential to reach out to many more people, young and old, to provide them with vital information they need to allow them to manage their own health. We are working hard on developing a pilot study in 2009/10 with key partners including; Department of Health, Defra, the Met Office, a Sussex PCT, the Sussex local and county authorities, University of Brighton and King's College London."

- www.sussex-air.net

Monitors move

Air Monitors has moved. Its new telephone number is 01684 857530 and new address is: Unit 2, Bredon Court, Brockeridge Park Twynning, Tewkesbury Gloucestershire, GL20 6FF.

- www.airmonitors.co.uk

IN BRIEF

Quinn Glass saga continues

Quinn Glass of Chester has appealed against an enforcement notice requiring its plant to be dismantled.

The firm has been the subject of a long running battle with a competitor which claims Quinn Glass's new factory has not been legally permitted.

Quinn Glass built its glass recycling works and started operating it before industrial permits and planning permission had been granted. Rival firm Ardagh (formerly Rockware Glass) said that local councils Chester and Ellesmere Port should close the plant down. However local councils were reluctant to issue an enforcement notice requiring dismantling of a factory that employed 700 people and could lead to an appeal and heavy costs.

The case reached the High Court, and in April judges issued an injunction requiring the councils to issue an enforcement notice. Quinn Glass has now appealed against that notice.

EPP consultation

Consultation has started on the structure and content of several pieces of draft Government guidance for the Environmental Permitting Regulations.

The draft guidance documents include:

- Core Guidance for the draft Environmental Permitting (England and Wales) Regulations [2010];
- Radioactive Substance Regulation (RSR);
- Water Discharge Activities;
- The Mining Waste Directive;
- The Batteries Directive.

www.defra.gov.uk/corporate/consult/env-permitting-guidance

European quality

A report has been released on European quality of life.

It reviews air quality and noise impacts.

- *Ensuring quality of life in Europe's cities and towns, EEA Report No 5/2009* can be viewed on www.eea.europa.eu/publications

PERMITTING

Coke oven permit refused

The Environment Agency has refused an application from a South Yorkshire coke and chemical plant to bring back into operation nine old coke ovens.

The decision on the application by Monckton Coke and Chemical Plant in Royston, near Barnsley.

It was found that the firm could not demonstrate that the disused coke ovens would be

brought up to stringent environmental standards. As a result, the Environment Agency rejected the application.

Environment Agency team leader Ian Foster said: "We were initially supportive of the proposal because it could have brought improvements to the whole plant, however the application failed to demonstrate

that the company would apply our strict environmental standards. This left us with no alternative but to refuse the application."

Monckton Coke and Chemical Plant made an application to vary its environmental permit, which was issued by the Environment Agency, in October 2008 (*AQB November 2008 p4*).

PROSECUTIONS

Scottish company fined for burning caravans

A company from Sillloth-on-Solway has pleaded guilty at Carlisle Crown Court to burning waste illegally on their own land.

Sam Hagan leisure (UK) Ltd, which owns and operates Solway Holiday Village was fined £5,000 and ordered to pay costs of £5,000 after being caught burning old caravans in May 2008 the Environment

Agency attended the site following smoke complaints and found dismantled caravans were being burned. The agency pointed out that the parts that make up a caravan include plastic, insulating foam, paint and varnish. All of these materials give off dangerous fumes when burned.

Under environmental regulations, a company must

take reasonable measures to ensure that any waste they produce is disposed of by a company with the correct environmental permit to do so. Sam Hagan Leisure (UK) Ltd did not have a permit to dispose of this waste on site.

The company had previously accepted a formal caution from the Environment Agency for a similar offence in May 2003.

REGULATION

Six year review of process notes

Defra is consulting on an indicative timetable for the review of the 80 process guidance (PG) notes on standards of air emissions regulated from industrial activities.

Notes cover groups such as solvents, combustion, metals,

incineration and minerals. Defra says: "This is an indicative timetable, because the time taken to review individual notes is expected to vary, depending on the complexity of issues arising and degree of engagement by stakeholders. Therefore the timetable will be

reviewed regularly, and revisions will be published in July and January.

- Information on progress will be available on the Environment Agency's Local Authorities Unit website at www.environment-agency.gov.uk/business/topics/permitting/36421.aspx.

PVR2

Further agreement on vapour regs

European Parliament has voted to approve at the first reading legislation to cut harmful vapour emissions from fuel stations.

Petrol vapour recovery aims to collect petrol fumes that escape from fuel tanks when cars are filled up at petrol stations.

Environment Commissioner Stavros Dimas said: "This directive will improve the protection of European citizens' health by contributing to the attainment of agreed EU air quality standards for two harmful pollutants, ground level ozone and benzene. The rapid agreement reached by

Parliament and Council on the basis of the Commission's proposal from last December underlines the EU's continuing commitment to tackling air pollution at source."

The directive will require so-called Stage II petrol vapour recovery (PVR) technologies to be fitted to petrol pumps at all service stations with an annual petrol throughput greater than 500 cubic metres per year when they are newly constructed or substantially refurbished.

All service stations situated underneath residential accommodation will also need to install this equipment if their throughput is above 100 cubic

metres per year (corresponding to about six cars filling up each day). The largest existing stations, with a throughput greater than 3000 cubic metres per year, will also have to implement Stage II PVR, by 2018 at the latest. In addition, service stations will have to inform the public about the operation of Stage II equipment which should help ensure its correct operation in practice.

Stage II PVR equipment is already installed in petrol stations in about half the member states. The directive will extend this practice to the whole of the EU, cutting emissions further.

GIS

Mapping alternative launched

Users of Ordnance Survey mapping now have an alternative supplier. The maps may be of interest to mappers of air quality and noise.

The independent GeoInformation Group has released UKMap and says it is the UK's first commercially funded, large-scale topographic mapping and address database created completely independently of the Ordnance Survey.

UKMap forms part of an ambitious five-year programme to map over 500 towns and cities covering all urban areas with a population greater than 10,000 — some 24,000 square

kilometres throughout the UK.

London is the first complete UKMap city covering over 1,700 sq km and is available on 1 September 2009. Areas to be published in 2010 include the West Midlands conurbation, Merseyside, Manchester and parts of Yorkshire.

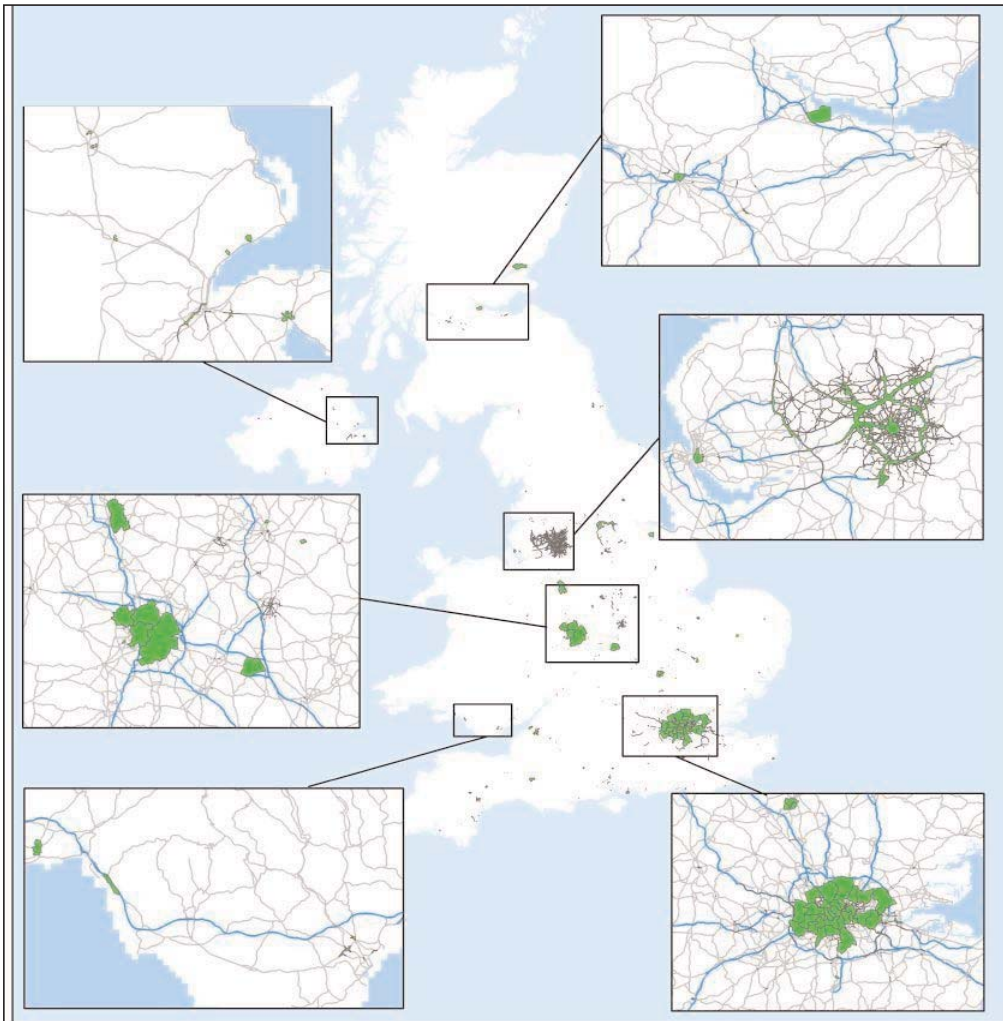
UKMap is a highly detailed, feature rich mapping database, which comprises integrated map layers and attribute tables. Captured for use at 1:1,000 scale, UKMap includes buildings with 3D information, road detail including pavements, lane markings, pedestrian crossings and speed humps, a full address gazetteer, inferred

property boundaries, land use coding and a wide range of points of interest. It also includes aerial photography and terrain layers.

Alisdair Maclean, GIS Manager of London Borough of Brent, comments, "UKMap represents a revolution in mapping and brings the provision of large scale mapping in the UK into the 21st Century. For the first time, users of large scale maps will not only have an accurate and feature rich layered solution, but have it in a format of their choice."

• Further details on the website www.theukmap.co.uk

AQMA maps revealed in GIS exercise



A list of UK AQMAs is contained in a new report from AEA. The report details AQMAs, flagging up recent changes, and how the areas have been set into GIS form. *2008 Updated GIS dataset of air quality management areas* can be viewed on www.airquality.co.uk/archive/reports

IN BRIEF

Buses feature in Oxford LEZ

Oxfordshire County Council has affirmed its support for its shared plan with Oxford City Council to improve air quality by declaring a low emission zone in the city applying to buses.

The county council is set to incorporate the city council's projects into its own proposals for a quality bus partnership scheme with all bus operating companies. The quality partnership involves operators agreeing to improve services, in return for infrastructure improvements paid for by the local authority.

In Oxfordshire's case it will also include low emission buses, joint-operator ticketing and coordinated timetabling.

Despite road layouts being altered to reduce car traffic, Oxford's streets still have high pollution levels and this has been blamed on buses.

Hydrocarbons down

The annual summary of data produced by the UK ambient automatic hydrocarbon air quality network shows continued falls in 2007.

• It can be viewed on the reports section of www.airquality.co.uk

GHG reports also

Two reports on greenhouse gas inventories have been published.

• *UK greenhouse gas inventory, 1990 to 2007: Annual report for submission under the framework convention on climate change* and *Summary of differences between geographical coverages of reported GHG emissions* can be viewed on www.airquality.co.uk/archive/reports/

Forecast meeting

AEA is repeating its popular annual UK Air Quality Forecasting Seminar.

It will be held on Thursday 16th July at the Council House in Birmingham.

• Contact sue.powditch@aeat.co.uk for further information and a booking form.

IN BRIEF

Welsh guidance

The Welsh Assembly Government has issued its version of technical guidance for air quality.

The guidance is based on that released for England (*AQB March p8*) but reflecting differences in Welsh local authority organisation and policy.

● <http://wales.gov.uk/topics/environmentcountry/epq/airqualitypollution/laqmguidance/?lang=en>

Composting odour

AEA has produced guidance on composting and odour control.

This guidance document is prepared on behalf of Defra and the Welsh Assembly Government, primarily giving guidance on regulation for local authorities. It states: "Although this guide is not statutory, it provides information on best practice techniques for the control of composting odours and the proactive and reactive assessment of nuisance odour from composting."

It is aimed at:

- Regulators: who may have regard to the guide when considering planning or permit applications, and when regulating installations which have a permit;
- Operators: who are advised to have regard to it when making applications and in the subsequent operation of their activities; and
- Members of the public: who may be interested to know what standards are envisaged for installations in this sector.

Good practice and regulatory guidance on composting and odour control for local authorities, NNR 275 can be viewed on www.defra.gov.uk/environment/noise/research/pdf/composting-odour-guidance.pdf

More trees in London

Mayor Boris Johnson says he is expanding his street tree programme.

He claims that street trees offer a range of benefits including attracting wildlife, providing shade and helping improve local air quality.

POLLUTION EVENTS

Heatwave plan updated

New advice to help people with respiratory problems cope in a heatwave has been published.

Heatwaves are often associated with poor air quality and can lead to excess deaths. The Met Office is predicting that this summer could be hotter than recent 'washout' years.

The Department of health heatwave plan has been updated to advise those suffering breathing problems that although ozone levels increase in hot weather, they drop in the evening. People with respiratory problems should stay inside during the hottest part of the day and windows should be kept shaded and closed when the temperature is hotter outside than inside.

The benefits of insulating against both heat and cold are outlined, with information on

grants that are available from government. Providing cavity insulation in houses helps keep the heat out during summer, as well as keeping homes warm during colder weather.

More information on the Health Housing and Safety Rating System is also provided in the plan. This encourages primary care trusts and local authorities to work more closely to target, assess and reduce the risk of vulnerable people living in the community who are living in homes that are too hot for their health.

Yvonne Doyle, south east director of public health said: "The heatwave plan urges carers to identify those most at risk before the hot weather begins. Once level 2, 'Alert and Readiness' has been triggered, those running care homes are

urged to take extra care. They should monitor indoor temperatures four times a day, prepare cool areas, ensure there are enough staff to keep residents cool, identify those at greatest risk and make sure everyone has access to cold water and ice."

The alert levels are now described from Level 1-4, but are also given colours that mirror the traffic light system. The heatwave plan operates from 1 June to 15 September each year, and is based on information provided by the Met Office, which trigger alert levels according to threshold temperatures.

● The Heatwave Plan can be viewed on www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_084670

POLICY

Defra endorses low emission approach

Defra air quality head Martin Williams has praised the Low Emission Strategies (LES) Partnership and emphasised the importance for transport planners, land use planners and environmental practitioners coming together in a coherent and complementary way.

Meanwhile, the Department for Communities and Local Government has awarded the partnership a second round of funding to support continued expansion of its work. The LES partnership is working with 15 local authorities across England supporting low emission strategies.

Williams commented: "Both transport planners and land use planners should be encouraged to consider the impacts of developments on air quality and the environment from conception through to completion and beyond.

Wherever possible, transport planners and urban planners more generally by taking an imaginative longer-term view of the sustainable urban environment, can improve the liveability and quality of life in urban areas of the UK, with valuable benefits for air quality, greenhouse gas emissions and other environmental and health

indicators.

Rob Pilling, LES programme manager, said: "We are very keen to work with Defra to promote the adoption and use of low emission approaches. The LES Partnership already works with several local authorities and our approach is achievable and effective, especially when planners and environmental practitioners work well together. The LES model ensures that developments are designed with the lowest environmental impact. Now we hope to develop this model within Defra's new guidelines and roll out the approach across all local authorities in England."

Defra's Williams added: "I

want to ensure that the position I have as the leader of the air quality and industrial pollution programme in Defra is directed towards promoting a coherent and joined up strategy nationally which encourages, complements and supports action locally.

"All this work is very important and I am pleased to be able to promote it and would like to take the opportunity to support everyone who is working hard to deliver low emission strategies on the ground."

● The Low Emission Strategy Partnership has a new website which can be viewed at www.lowemissionstrategies.org

Scrappage scheme encourages small cars

The Government is claiming that the £2000 'new for old' scrappage grants have succeeded in increasing car sales. Reports suggest that smaller, more fuel efficient and lower emission cars are proving more popular than more expensive, larger engined cars.

The Government says there has been more than 35,000 orders since the announcement of the £2000 scrappage subsidy (£1000 of which is paid for by car firms). This equates to one scrappage scheme order out of every five new car orders in this period.

The Government says the scheme will stimulate sales and get older vehicles off the road and encourage consumers to invest in new, safer, and potentially more environmentally friendly models.

DATA HANDLING

Openair opens its doors

Air quality professionals can now access a new way of manipulating data they collect through monitoring.

The Institute for Transport Studies at the University of Leeds has announced the launch of the Openair project. The three year project is funded by the Natural Environment Research Council (NERC) with additional funding from Defra, AEA and several local authorities.

The project aims to make innovative, open-source data analysis tools available for free to the air quality community. These tools are designed for the analysis of air pollution data and dispersion model output, early results from the project

were revealed to conferences last year (*AQB June 2008 p2*).

Leeds' David Carslaw said: "The underlying theme of the project is that considerably more useful information can be gleaned from air quality data using tools specifically designed for the purpose than is usually the case. As such, the tools should have wide appeal from central and local government, consultancies, private companies, regulators and university researchers. Many of these tools would normally require specialist visualisation or statistical software but have been made available in the highly developed open-source statistical software called R.

The Openair website provides

more details on the project and a pre-release version of the Openair "package" that users can test ahead of its final release in October 2011. The project will be continuously developed over the next few years and Leeds is keen to receive user feedback to ensure the tools are of maximum benefit to the community.

AEA and ITS are working to apply these tools to national AURN monitoring data presented on the air quality UK Archive. This will allow web users a greater range of functionality, visualisation and analysis when interrogating the national network measurements.

● Contact David Carslaw, www.openair-project.org

MONITORING

Opsis canyon monitoring for Sandwell

Sandwell MBC faced difficulties when considering the best way to monitor a street which, at ground level, had shops and offices and residents at first or second floor level.

Sandwell's Robert Lloyd chose Enviro Technology's Opsis open path monitoring system to solve the problem.

Following the completion of an air quality review and assessment, Sandwell found that there were significant levels of nitrogen dioxide recorded within Bearwood. Further tests using diffusion tubes also supported these findings.

The street was highlighted as a hot spot due not only to this high percentage of NO₂ but also its street canyon nature and the high propensity of traffic that

flowed through daily. Air pollution can be 20% higher at first and second floor level than at street level so monitoring is important.

Sandwell could have chosen chemiluminescent monitors, but this would have meant that the council would have had to sample at many different points. Maintenance would also have been a problem due to the high temperatures, moving parts and pumps which would need to be changed regularly.

Instead it chose the Opsis. This consists of a transmitter and receiver which can be mounted at any height and needs little maintenance.

The Opsis system measures NO₂, SO₂ and ozone through one light path. From topography



reports on Bearwood, Sandwell assessed that they would need to monitor gasses through a 200 metre path, within the capabilities of the equipment.

For Sandwell, Opsis has been a cost effective 'fit and forget' system. Although initial set up costs were a little higher, savings have been seen over the years in terms of maintenance and operator time.

Sandwell use Airviro software to record data. The data that is received informs the council's air quality review and assessment process which in turn helps to advise air quality action plans. The data is also available for public view on the council's air quality website.

● More on Opsis: www.et.co.uk

Mcerts confirms continued growth

Organisers of the recent Mcerts exhibition say visitor numbers grew by 10% in comparison with the 2007 figures. Dave Curtis from the Source Testing Association (STA) said, "Prior to the event we were concerned that visitor numbers might be reduced as a result of the recession, so it was very pleasing to note that delegate numbers have continued to grow."

2009 was the fifth in a series of Mcerts events, all of which have been jointly organised with the Environment Agency of England and Wales, Environmental Technology Publications and the STA. Established in 1995, the STA is a non-profit making organisation with a corporate membership of over 200 companies from process operators, regulators, equipment suppliers and test laboratories.

● Mcerts 2011 will take place on 6th/7th April 2011.

IN BRIEF

World class places

New guidance aims to set out why and how quality of place matters and the practical steps the Government will be taking to improve things.

The government says: "The places where people live have a profound effect on their quality of life and life chances. Places exercise this effect in a range of ways – through, for instance, crime levels, pollution levels, employment opportunities, social ties and opportunities for community engagement, and the range and quality of local services, transport links and green space. Quality of place can then be understood as that subset of factors that affect people's quality of life and life chances through the way the environment is planned, designed, developed and maintained.

● *World class places: The Government's strategy for improving quality of place* www.communities.gov.uk/publications/planningandbuilding/worldclassplaces

Planners told

Northern Ireland planners have been told that greater weight will be given in the future, where appropriate, to the economic consideration of planning proposals.

Environment minister Sammy Wilson told planning authorities: "I want to give clarity and leave nobody in any doubt about how to deal with economic considerations. Full account shall be taken of the economic aspects of a planning proposal, including the wider benefits to the regional or local economy, alongside social and environmental aspects.

"Where the economic benefits of a proposal are significant, then substantial weight should be afforded to them."

The statement is likely to give confidence to planning authorities to give economic benefits (ie jobs) more weight when balancing them against environmental disbenefits.

Air on your Iphone

Researchers at Kings College London find an innovative way to push air quality data to the public

Researchers at Kings College London have come up with a brilliant idea – an Iphone app on air quality.

For those who are not plugged in to the Iphone phenomenon, the Apple Iphone is more like a mini computer than a phone. It isn't the best phone, it isn't the best hand held computer, and the Blackberry may be better at emailing, but as with most Macs, what's there is far easier to use, so ordinary people can get more out of it.

Part of the ease of use of the Iphone, and its appeal, lie in its apps. The Iphone has over 35,000 downloadable applications varying from business software to silly games, many of which are free, others available at a nominal charge which is simply added to your monthly bill.

When you buy an Iphone, it comes with a mapping system that functions much like Satnav. Press the 'where am I now' button and it immediately pinpoints your location down to street level.

ERG's Andy Grieve is an Iphone user, and spotted the opportunities for harnessing the Iphone for disseminating air quality information. In his own time, and with the help of a friend into programming, he produced a prototype app that has been accepted by Apple and is now available for free download.

AQB spoke to Grieve about how the app came about: "I got an Iphone about a year ago and through using it, and seeing what it could do, the idea of using it for air quality grew and I talked to the IT guys here at Kings."

The app would require the ability for users to be able to download data as and when they wanted by tapping into Kings' servers. There are obvious dangers to this, but then again RSS feeds need a similar system so in principle, it can be done.

"By setting up a separate area on the server, the IT guys were happy and we were able to make air quality data available to Iphone users," says Grieve.

Working with the IT friend who did the coding, the next thing was to develop the app and get it into stable and workable state. App developers pay Apple £59 to gain access to the source code, and the ability to submit working apps to Apple for approval. "We got this last

month and it is now available. Some 240 users have downloaded it in the UK, 50 more have downloaded it from outside the UK.

App users get to rate the applications, it has so far got three stars (out of five). "Not bad considering that it is very basic at the moment," says Grieve.

Currently users can interrogate King's servers and get data in user friendly form – but little more. Grieve explained: "The Iphone 'where am I' feature could obviously be incorporated, as could the Google mapping capabilities within the Iphone."

For instance the functionality of www.walkit.com would be ideally suited to the Iphone. Walkit allows users to input their start and finish points to find out the best walking route. London boroughs have added air quality data to the site so that the chosen route can minimise exposure to areas with the worst air quality. "This the sort of thing we can include in the Iphone app and we will be looking at this as we develop it further."

At the moment the app is not integrated with Kings' Airtext alerting system. Grieve says: "My personal belief is that it is better to have a 'push' system that sends data to the user, rather than a passive system which relies on the user visiting a website."

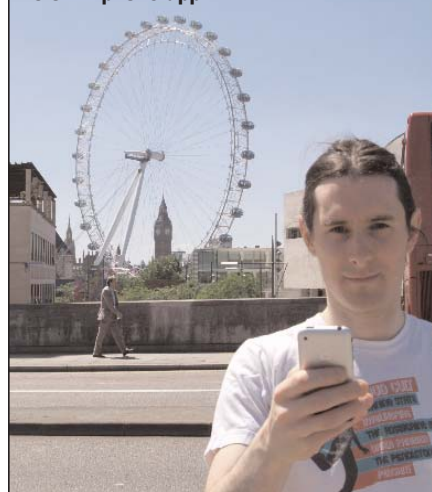
Other areas which could be developed include councils having bespoke air quality data sent to their residents, and of course rewriting the code on the app so it could be used on devices such as Blackberries and other internet phones. But it will all cost time and money.

"We have had discussions about charging.

On the one hand, the air quality data people are accessing is free and Iphone users may not expect to have to pay to access it. On the other hand, it has taken us a lot of time to produce the app (time valued at a few thousand pounds had we gone out to tender to produce it), and it will cost us money to develop it further. We are thinking that we might have a 'lite' application which is free, while one which has greater functionality will be available at a modest price."

Iphone apps are typically very cheap, often less than a pound, so there would have to be a reasonable number of downloads to recover costs. Grieve suggests there is a large potential number of customers – some 30m

Andy Grieve checks air quality on his own Iphone app



Iphones and ITouches have been sold and they continue to sell well. ITouches are Iphones without the phone functionality, hooking up wherever there is a wifi signal.

Kings' Iphone app does offer an exciting new way to try and enthuse the public about air quality, but one cannot help think that the potential of the service will be limited by turf wars on the data.

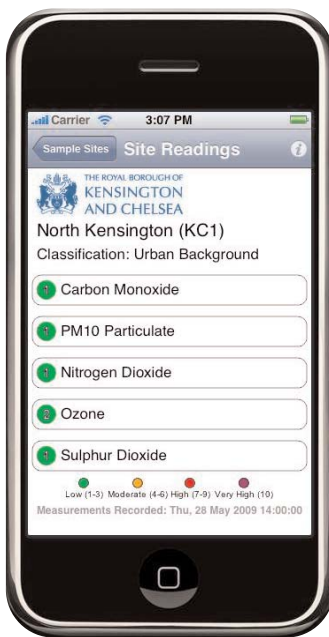
AQB has noted before that south east England is served by two competing air quality alerting systems, one run by ERG, the other underpinned by software firm Cerc. Both offer text, phone and email alerts for registered users when air quality is poor, but they compete against each other and there are no plans to combine the systems and reap rewards from economy of scale (AQB February 2007 p2). Combining into one system would require one side to throw in the towel, which would require altruism possibly beyond the call of duty.

So while ERG has launched the Iphone app that works with ERG data culled from London authorities, it does not work, for instance, with data collected by AEA for the Kent network, or indeed the national network.

Similar problems exist among the monitoring firms – Enviro Technology, Casella and Air Monitors all collect air quality data and market various different bespoke solutions for getting it out to the public. But systems are different, and data from one firm is not going to be viewable on another firms' distribution system.

So with data scattered between local and national government, AEA and ERG and monitor firms, unless someone knocks heads together, there is no prospect that a common format and platform can be agreed, and data shared. Defra is highly unlikely to get involved – after all it has steadfastly refused to endorse one dispersion model over another – or indeed dictate which particle monitoring system should be used. All this will severely limit the mass roll out of the Iphone app.

But Grieve is bullish: "We have developed an app that is pretty good but only just in its infancy, now we have the opportunity to do something really great and create a world class app."



How to handle risk

A guide to accepting risk

For local authorities tired of journalists and protesters misusing risk, now there's a handy guide

We've all seen the headlines: "Toxic killer traffic fumes...". When faced with these, it's no good soberly pointing out to the public that they are unlikely to drop dead just because the local authority has declared an air quality management area.

With loaded terms such as toxic and killer fumes applied to relatively benign pollutants such as nitrogen dioxide, there's few superlatives left over to describe what might come out of "dioxin factories" – incinerators and cement kilns.

Local authority air quality officers face a dilemma in their job by trying to balance between whipping up interest in their consultations – and alarming the public. All too often, councils report just a handful of responses to consultations on air quality management areas. They may be tempted to talk up health effects, but their bosses wouldn't thank them for it if it causes toxic headlines!

Attempting to explain risk to the public is fraught with danger. Questioning may follow the line on whether air pollution is at safe levels: "Either its safe, or its dangerous" the argument might run. At this point environmental health officers will find it hard to be heard in a public meeting. Admitting that there are no safe levels for some pollutants never goes down well with a community sensitised to some new and unpopular development.

A new report from a Government thinktank is aimed at explaining how risk can be handled by decision makers. While it deals with risk in a general sense, it has many lessons for those discussing a new air quality management area – or incinerator.

Overseen by Berr, the former DTI, the Risk and Regulation Advisory Council has been leading "an experimental offensive against the mishandling of risk in society". It looked at how distorted perceptions of risks can encourage poor policy-making and unnecessary laws, leading people to feel that Government is interfering too much in their lives.

It has now published its final report *Response with responsibility: Policy-making for public risk in the 21st century*. The report summarises the council's findings, introduces an approach and tools for dealing with public risk, offers advice for ministers in charge of responding to a risk and sets out the council's recommendations.

Among its conclusions is a call for the setting up of an independent Public Risk Commission.

The council identified trends that contribute to breakdowns in the appropriateness and effectiveness of policy-making:

- Risk actors who, through their actions

and interactions, shape perceptions of and responses to public risk. A small subset of these actors are active 'risk-mongers', who wilfully distort perceptions and this can endanger the policy making-process;

- The streams of data, information and opinion which can distort perceptions of risk and scare people away from managing risks themselves;
- The intolerance of failure that lead to yet more red tape and restrictions on people's behaviour;
- The pressure on government to act hastily;
- The risk of removing responsibility from individuals, with the potential consequence of reducing community resilience.

The Risk and Regulation Advisory Council recommends that the Government, as part of its current commitment to create the optimal risk and regulatory governance framework, should without delay establish an independent Public Risk Commission (PRC):

- To identify and understand instances where business, civic society, the third sector and the public are feeling the weight of ineffective policy, disproportionate responses to risk, unwelcome curtailment of civil liberties, weakened community resilience or simply over-managed lives;
- To recommend to Government specific opportunities to stem or reverse regulatory creep, acting as a neutral independent agent when required in the recommendation and implementation processes;
- To communicate with and challenge risk actors and risk-mongers – in liaison with business, civic society, the third sector and the public – when there is evidence of unhelpful risk actor behaviour, when their voices are in danger of inadvertently leading to poor regulatory outcomes, or when breakdowns in trust are acting as barriers to effective communication;
- To provide an independent and supportive voice where the Government and independent regulators are following good practice but failing to be heard through the distorting or emotional noise from risk actors;
- To provide an independent resource to Government in helping to understand and manage the risk landscape, even when under severe time pressure;
- To challenge Government to display the leadership required to set the right tone amongst the risk actor community.

The approach places an emphasis on three key disciplines:

- Understanding the risk in context

Factors that make it easier for people to accept risks

Voluntary: I choose to use my mobile phone despite any associated risks

Control: I drive my car

Natural: A volcano erupts

High probability, low consequences: I live near a stream that floods most years but this flooding does little damage

Familiar: I eat the food my parents ate

Adults at risk: An adult chooses to receive the yellow fever vaccine

Factors that make it harder for people to accept risks

Involuntary: I do not have an influence over where a nearby phone mast is sited, despite any associated risks

No control: I do not drive the train on which I travel

Technological: A chemical plant blows up

Low probability, high consequences: I live near a nuclear power station which is very unlikely to explode, but if it does it will be devastating

Non familiar: I eat genetically modified food

Children at risk: A child must receive the MMR vaccine

– getting to the bottom of how perceptions of the risk have been shaped, including through mapping the landscape around the risk;

- Engaging with a broad community – actively engaging the many different groups of people who have an interest in the issue and its outcomes, from an early stage, using the map of the risk landscape to develop a common understanding of the issues and to explore together how the issues can be tackled;
- Effective communication – quickly restoring focus to the underlying nature of any given risk, provoking insightful debate amongst the public about interventions and trade-offs.

Response with responsibility: Policy-making for public risk in the 21st century
www.berr.gov.uk/deliverypartners/list/rac/index.html



Bill posters and headlines in local newspapers use the word toxic very loosely



SCIENCE SHORTS

Tubes compared

Performance of NO_x, NO₂ and ozone diffusion tubes has been compared.

Comparative evaluation of nitrogen oxides and ozone passive diffusion tubes for exposure studies, Sotiris Vardoulakis et al, *Atmospheric Environment*, Vol. 43 (2009) pp2509-2517.

Carbon near roads

Japanese researchers studied pollution transects at distances of 5, 35, 70 and 150m distances from ten roadside sites.

Measurements of NO_x, PM₁₀, PM_{2.5} and black carbon from which elemental carbon was calculated. Monitoring results were compared to modelling results, with good agreement found. Elemental carbon made up 40% of PM. **Analysis of traffic related NO_x and EC concentrations at various distances from major roads in Japan, Tarek Mohamed Naser et al, *Atmospheric Environment* Vol. 43. (2009) pp2379-2390.**

NO₂ affects pollen

Austrian researchers believe that ambient levels of NO₂ may affect pollen viability. This suggests NO₂ may reduce regeneration of pine in polluted environments.

Ambient levels of nitrogen dioxide may reduce pollen viability in Austrian pine trees – correlative evidence from a field study, Elena Gottardini, *Science of the Total Environment* Vol. 402 pp299-305.

Traffic & cancer risk

Italian researchers believe that high exposure to traffic pollution could increase cancer risk.

214 Florence residents were recruited into a study, a third of whom were workers exposed to traffic fumes. DNA markers and exposure to PM₁₀ were correlated. DNA adduct levels – known to be predictive of lung cancer risk – were found to be increased among the traffic exposed group. **DNA adducts and PM₁₀ exposure in traffic exposed workers and residents from the EPIC-Florence City Study, Domenico Palli et al, *Science of the Total Environment* Vol. 403 pp105-112.**

TRAFFIC POLLUTION

Dawn pollution near motorway

Researchers have focussed on motorway pollution in the early morning period. The particular early morning weather conditions suggested that fall off of pollution was not as rapid as expected.

Researchers say: “Previous studies have shown much sharper air pollutant gradients downwind of freeways, with levels above background concentrations extending only 300m downwind of roadways during the day and up to 500m at night. In this study, real-time air pollutant concentrations were measured along a 3,600 m transect normal to an elevated freeway 1–2 hours before sunrise using an electric vehicle mobile platform equipped with fast-response instruments.

“In winter pre-sunrise hours, the peak ultrafine particle (UFP) concentration (95,000 cm³)

occurred immediately downwind of the freeway. However, downwind UFP concentrations as high as 40,000 cm³ extended at least 1,200m from the freeway, and did not reach background levels (15,000 cm³) until a distance of about 2,600m. Ultrafine particle concentrations were also elevated over background levels up to 600m upwind of the freeway.

They added that other pollutants, such as NO and PAHs showed similar patterns.

When measurements were taken after sunrise, particle fall off was found to revert to the 300m often seen during motorway transect studies.

They added: “Although pre-sunrise traffic volumes on the freeway were much lower than daytime congestion peaks, downwind ultrafine particle

concentrations were significantly higher during pre-sunrise hours than during the daytime. We associate these elevated pre-sunrise concentrations over a wide area with a nocturnal surface temperature inversion, low wind speeds, and high relative humidity.

“Observation of such wide air pollutant impact area downwind of a major roadway prior to sunrise has important exposure assessment implications since it demonstrates extensive roadway impacts on residential areas during pre-sunrise hours, when most people are at home.”

A wide area of air pollutant impact downwind of a freeway during pre-sunrise hours Shishan Hu et al, *Atmospheric Environment*, Vol. 43, 16, May 2009, Pages 2541-2549

BIOMASS

Woodstove replacement tackles poor air

US researchers have studied the impact of woodstove boiler replacement on fine particle pollution.

A Montana town suffered a fine particle PM_{2.5} problem because of the number of householders burning wood. A woodstove replacement

programme led to 1,200 old boilers being replaced with cleaner emission versions with PM_{2.5} samples taken before, during and after the replacement.

Sampling showed that while PM_{2.5} levels dropped after the initiative, levels of resin acids

(contained in wood combustion products) increased.

The effect of a woodstove change out on ambient levels of PM_{2.5} and chemical tracers for wood smoke in Lobby, Montana, Megan Bergauff et al, *Atmospheric Environment* Vol. 43 (2009) pp2938-2943.

PREGNANCY

Birth defects remain undecided

Australian researchers have been unable to definitively conclude whether air pollution causes birth defects.

The study examined potential associations between ambient air pollution and congenital heart defects and cleft lip or palate among births in Brisbane (1998-2004). Air pollution levels were averaged over weeks 3-8 of pregnancy among 150,308 births where the mother resided within 6 and 12kms of an ambient air quality monitor.

When analysing all births there was no indication that ambient air pollution in

Brisbane was associated with a higher risk of cardiac defects. Among births where the mother resided within 6km of an ambient air quality monitor, a 5 ppb increase in ozone was associated with an increased risk of pulmonary artery and valve defects (odds ratio 2.96) while a 0.6 ppb increase in SO₂ was associated with an increased risk of aortic artery and valve defects (OR 10.76). For oral cleft defects among all births, the only adverse association was between SO₂ and cleft lip with or without cleft palate (OR 1.27, 95% CI:

1.01, 1.62). However, various significant inverse associations were also found between air pollutants and birth defects.

Researchers concluded: “This study found mixed results and it is difficult to conclude whether ambient air pollution in Brisbane has an adverse association with the birth defects examined. Studies using more detailed estimates of air pollution exposure are needed.” **Ambient air pollution and birth defects in Brisbane, Australia. C A Hansen et al, *PLoS ONE* 4(4): e5408 doi:10.1371**

SCIENCE SHORTS

BIOMASS

Wood particles avoid lung

Particles from wood combustion are less likely to stick in the lung than particles from traffic pollution, Swedish researchers believe.

Ten healthy adults were studied and subjected to particles from a wood pellet burning stove burning efficiently, and another burning at low temperature making a lot of smoke. Deposition in the lung was modelled.

The measured total deposited fraction of particles from both efficient and low temperature combustion was 0.21-0.24 by number, surface and mass as the deposition probability is close to

a minimum.

Researchers explained: "To the best of our knowledge, this study represents the first measurements of respiratory tract deposition of aerosol particles from biomass combustion.

"Irrespective of combustion conditions, the respiratory tract deposition of particles emitted from biomass combustion is relatively low compared to the expected deposition of many other combustion aerosol such as fresh traffic exhaust particles."

A large part of the reason for this (and variability in

deposition) is the ability of the combustion derived particles to absorb water. Efficient combustion particles consist almost exclusively of water soluble salts which if deposited in the lung, will then be diluted and removed by circulation. Inefficient combustion particles are mostly soot and organic compounds can persist for a long time in the lung and are more dangerous.

Deposition of biomass combustion aerosol particles in the human respiratory tract, Jakob Londahl et al, *Inhalation Toxicology* Vol. 20 pp923-933.

TRAFFIC POLLUTION

More metals from truck exhaust

Emission factors for elemental metals have been estimated from several heavy-duty diesel vehicles up to ten years old.

Vehicles operating with advanced particulate and/or NO_x emissions control retrofits on a heavy-duty chassis dynamometer, under steady state cruise, transient, and idle conditions were tested for emissions of metals. PM samples

Researchers found that all the

diesel particulate filters significantly reduced emissions of total trace elements although the picture for metals was mixed.

For instance, during cruise, researchers observed higher levels of platinum for most of the retrofit-equipped vehicle tests compared to the baseline configuration. The vanadium-based DPF + SCR (particulate filter plus catalyst) vehicle during cruise operation

exhibited emissions of vanadium and titanium suggesting the possible release of actual SCR wash-coat (V₂O₅/TiO₂) from the catalyst under the higher temperatures characteristic of cruise operation.

Metals emitted from heavy-duty diesel vehicles equipped with advanced PM and NO_x emission controls, Shaohua et al, *Atmospheric Environment* Vol. 43 (2009) pp2950-2959.

CLIMATE SCIENCE

Aerosol data open possibilities

Aerosol levels have been measured across the world for the period 1973-2007 in a study which looks at the link between air pollution and climate change.

The findings also reveal that Europe is the only continent to have seen an overall drop in aerosol levels.

In the atmosphere, aerosols can reduce the surface temperature of the earth and alter the energy balance by either reflecting solar radiation back into space or by absorbing radiation. They further affect surface temperature by

modifying cloud cover or when eventually deposited on surfaces such as polar ice-caps. As such, it is thought they play a role in climate change, but the size of this role is uncertain.

Different types of aerosols may actually have opposite effects on climate forcing. Sulphates and black carbon have different impacts, for example.

The researchers created a database of visibility measurements taken from 1973-2007 at 3,250 meteorological stations worldwide. A preliminary analysis of the data

demonstrates a steady global increase in aerosols throughout this period. In Europe, there has been a decrease in aerosols.

This may be because there has not been a significant rise in fossil fuel use but also because air quality regulations have addressed the direct emission of particles and emission of secondary particle precursors, through reduced sulphur content of fuel, for example.

Clear sky visibility has decreased over land globally from 1973 to 2007. K Wang et al, *Science*. (2009) 323: 1468-1470.

DNA the key?

DNA damage could be the mechanisms by which particulate matter augment the risk of lung cancer, researchers say.

DNA damage response of A549 cells treated with particulate matter PM₁₀ of urban air pollutants, Yesennia Sánchez-Pérez et al *Cancer Letters* Vol. 278, Issue 2, 2009, pp 192-200

Sweeping resuspends

Road sweeping resuspends PM₁₀, Indian researchers suggest.

A quarter of deposited PM₁₀ is resuspended into the atmosphere during city wide road sweeping exercises, they say.

City wide sweeping a source for respirable particulate matter in the atmosphere, Ankit Tandon et al, *Atmospheric Environment*, Vol. 42 pp1064-1069.

Genetics probe

French researchers have looked at the ability of in vitro short-term exposure to air pollution Particulate Matter (PM) to induce genomic alterations in Dunkirk City's PM_{2.5}-exposed human epithelial lung cells (L132).

Role of air pollution Particulate Matter PM_{2.5} in the occurrence of loss of heterozygosity in multiple critical regions of 3p chromosome in human epithelial lung cells (L132) F Saint-Georges et al, *Toxicology Letters*. 2009 Vol. 187(3):pp172-9.

Urban suits hybrids

Greek researchers tested Toyota and Honda hybrids for their performance.

Following tests against various European engine test cycles, both types showed a halving of fuel economy in urban driving cycles but matched those of a diesel at motorway speed. Most air quality improvement was also in urban conditions.

Experimental evaluation of hybrid vehicle fuel economy and pollutant emissions over real world simulation driving cycles, Gerogios Fontaras et al, *Atmospheric Environment* Vol. 42 pp4023-4035.

We've been sceptical about the vehicle scrappage scheme announced in the recent Budget.

Given that air quality strategies have flagged up the need to get high polluting vehicles off the road, you would have thought that there would be some mechanism to ensure that there were air quality benefits.

The Environmental Transport Association has noted this – pointing out that Bentley, Porsche and Rolls Royce have signed up to 'green' scrappage scheme. ETA says: "The manufacturers of some of the most-polluting cars on British roads, including Bentley, Porsche and Rolls Royce, have signed up for the government's scrappage scheme, an initiative described as 'green' because it aims to replace older vehicles with new, fuel-efficient models.

"In theory it means that someone who scraps a 1999 Volkswagen Lupo TDi 3L, (81g CO₂/km) and buys a 2009 Bentley Arnage 465g CO₂/km) would receive a £1,000 taxpayer-funded payment. The Bentley produces over five times as much CO₂ as the smaller car. Buying a green Bentley does not make this scrappage scheme environmentally-friendly."

However despite AQB's own scepticism, it appears that there may be some environmental benefits, seemingly by accident. £2,000 off an expensive car is not much of a discount. But £2000 off a cheap car gets more interesting – the cheapest scrappage deal is Kia's published deal on the entry-level Picanto for £4,195 (a third off). That's cheap, and it's a small, low polluting car.

But we do wonder how hard it would have been to restrict the grant to the cleanest band A-C vehicles. That could have neatly ticked a box on the air quality strategy wishlist.

The Committee on the Medical Effects of Air Pollution (Comeap) is trying hard to open itself up to the public.

But being a mixture of civil servants and academics, it has taken the time and trouble to set out a detailed policy. Now Comeap has been criticised in the past for not following the precautionary principle – it'll not get accused of being precautionary on this policy!

Comeap says: "The purpose of committee meetings being held in open session is to increase the visibility and transparency of the committee's work and to enable interested parties to hear

the committee's discussions." So far, so good.

"The meetings are not intended to provide a forum for independent observers or pressure groups to present their views on a subject to the committee." Hmm, okay, fair enough.

But then come the obstacles. Forms to be filled in, a code of conduct to obey, no recording instruments, no cameras, confidentiality requirements, getting in to the building, do not pass Go, do not collect £200 etc etc.

Despite these hurdles, Comeap is still optimistic that lots of people will want to see them in action and has thought about how to manage eager crowds wanting a piece of the action: "The committee meeting rooms have space for a limited number of observers. The maximum is about ten for any one meeting. Priority will be given to those observers who have an interest in a specific subject. Observers will then be selected in order of priority depending on specific interest(s) notified and the order of receipt of applications. In the event of oversubscription, multiple representatives from a single organisation will be limited."

Are they expecting a Flashmob?

AIR QUALITY EVENTS 2009

9th June

INVESTIGATION OF AIR POLLUTION STANDING CONFERENCE

Iapsc conference to be held in Sheffield. Website www.iapsc.org.uk. Apologies for getting the details wrong in the April edition.

23rd-25th June

12TH CONFERENCE ON COMBUSTION GENERATED NANOPARTICLES

to be held in Zurich www.lav.ethz.ch/nanoparticle_conf/index

16th July

AIR QUALITY FORECASTING SEMINAR

to be held at the Council House, Birmingham, Contact sue.powditch@aeat.co.uk

15th-17th September

MEASURING AIR POLLUTANTS BY DIFFUSIVE SAMPLING

and other low cost monitoring techniques, AAMG international conference with posters and exhibition to be held in Krakow, Poland <http://rsc-aamg.org>

17th September

CLEARER FUTURE CONFERENCE

South Yorks/Low Emission Strategies Development Partnership conference to be held in Sheffield www.care4air.org

23rd September

BIOMASS AND AIR QUALITY: MANAGING THE IMPACTS

Epub event to be held at the Royal Society in London Carry Keay 01273 878776 www.environmental-protection.org.uk

30th September

SOUTH WEST DIVISION AIR QUALITY MANAGEMENT EVENT

Epub SW division event to be held in Bristol email jo.barnes@uwe.ac.uk

12th November

AIR QUALITY UPDATE

EPUK conference to be held in Birmingham, Carry Keay 01273 878776 www.environmental-protection.org.uk

2010



12-16th September

15TH WORLD CLEAN AIR AND ENVIRONMENTAL PROTECTION CONGRESS

to be held in Vancouver, Canada <http://iuappa.com/index.htm>.

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AIR QUALITY

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Jack Pease