AIR QUALITY BULLETIN
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ACTION PLANS

LTp guidance: too vague

Reactions are emerging to the recent consultation on guidance on LTP3.

LTP3 is the third round of Local Transport Plans. Round one had little to do with air quality, round two introduced air quality as one of four key priorities, now round three barely mentions air quality.

The consultation on LTP3 was launched before Christmas (*AQB January p5*). It includes mentions of air quality here and there which is a far cry from 2004 LTP2 guidance which very specifically singled out air quality as a stated priority, alongside congestion, safety and climate change.

Cambridge City Council is one of the first to comment on the draft consultation. It noted: "The draft guidance document is very loosely worded in comparison with LTP2 and appears to be allowing far greater flexibility to transport authorities in how they work on their local transport issues.

"Air quality is no longer one of four key shared priorities; its importance has been reduced and the issue has been subsumed into the key goal of 'contribute to better safety, security and health' – one of the five goals and challenges.

"It is widely acknowledged that the one main way, nationally as well as locally, that air quality could be improved is by addressing emissions from transport, after all most AQMAs are transport related. Defra is currently under pressure to ensure that improvements in air quality are made in the UK to comply with EU targets. We are therefore surprised that air quality is not seen as important as previously."

Cambridge continued: "Air quality should be considered alongside climate change to ensure a synergistic approach. This could easily changed by inserting 'quantified reductions in polluting emissions' as well as 'quantified reductions in greenhouse gas emissions'.

"It is particularly important to ensure that air quality and transport are linked where there is a two tier local government with the transport authority separate from those delivering better air quality."

It adds that the section on bus strategies has no mention of lowering emissions: "These are nationally and locally important aspects of voluntary partnership agreements and should be explicitly mentioned."

● DfT *Consultation on Local Transport Plan 3 Guidance* closes on 9th April and can be viewed on www.dft.gov.uk/consultations/open/draftguidanceltp/mainconsultationltp.pdf

TRANSPORT POLICIES

AQ prompts Edinburgh parking scheme

In contrast to their rejection of congestion charge proposals a few years ago, Edinburgh residents appear to have backed a new parking charge scheme that will penalise polluting cars.

The City of Edinburgh Council is set to be the first local authority in Scotland to introduce a graduated charging structure for residents' parking permits in a bid to reduce the environmental impact of vehicle emissions.

The scheme would see the introduction of a banding system for residents' permits with fees based on the CO_2 emissions or engine size of their vehicle as has been seen in London boroughs such as Richmond.

The consultation demonstrated strong public support for the scheme, with almost three-quarters (73.2%) of 1,670 respondents in favour. By contrast in Richmond in 2006, only 49% supported the scheme (against 39% who opposed).

Edinburgh said: "As a local authority, the council has a duty to meet local air quality standards by 2010 and, unless we take action now, we will fail to meet the standards set. We must consider and introduce innovative solutions.

"This initiative will actually result in the council losing a small amount of parking revenue but should help us towards achieving our ultimate goal of improved air quality and a better environment for all."

The reduction in costs for 66% of permit holders in the controlled parking zone is due to the majority of vehicles either having an engine size of 2500cc or lower or vehicles that emit 185g/Km of CO_2 or less. Only 20% of drivers who own the most polluting cars or have engine sizes over 3000cc or own a second car will see an increase in costs.

INSIDE THIS ISSUE ...

Pope sets out health benefits

A study by respected air quality researcher C Arden Pope has quantified the health benefits of fine particle reductions.

In a paper in the *New England Journal of Medicine*, Pope and his team of researchers directly assessed associations between life expectancy and fine-particulate air pollution in 51 U.S. metropolitan areas, comparing data for the period from the late 1970s to the early 1980s with matched data for the period from the late 1990s to the early 2000s.

Researchers wanted to link air quality improvements with changes in life expectancy, especially looking at urban areas with large decreases in particles.

"Improvements in life expectancy during the 1980s and 1990s were associated with reductions in $PM_{2.5}$ across the study areas, even after adjustment. Indirect calculations point to a loss of 0.7 to 1.6 years of life that can be attributed to long term exposure to $PM_{2.5}$ at a concentration of 10µg/m^3 based on other risk estimates. In the present analysis, a decrease of 10 µg/m^3 in the $PM_{2.5}$ was associated with an estimated increase in life expectancy of approximately 0.61 years — an estimate that is nearly as large as these indirect estimates. Reductions in air pollution accounted for as much as 15% of the overall increase in life expectancy in the study areas.

They concluded: "A reduction in exposure to ambient fine-particulate air pollution contributed to significant and measurable improvements in life expectancy in the United States."

Fine-particulate air pollution and life expectancy in the United States, *New England Journal of Medicine* 2009;360:376-86.C. Arden Pope III et al, www.nejm.org

IN BRIEF

Caution costs?

Scottish Renewables says new technical guidance on air quality should allow councils to approve more biomass installations. Excessive caution to date has cost £4.5m, it claims.

Biomass advice is contained in new technical guidance released by Defra and the devolved regions last month (see feature, page 8).

Scottish Renewables warned that local authorities (such as the City of Edinburgh Council) now need to "urgently lift their moratoria on biomass installation approvals otherwise the industry will face severe economic loss and cause unnecessary greenhouse gas emissions".

It adds: "The industry had been waiting since October last year for a new modelling tool to be incorporated into guidance to enable local authorities to assess what the individual and cumulative particulate emissions impacts are from biomass boilers. In the absence of updated guidance some local authorities have applied a precautionary approach turning down projects despite a recent Scottish Government study showing particulate emissions at levels around half of what had previously been believed."

The study has proved controversial and *AQB* resorted to freedom of information laws to uncover the pressure being put on air quality professionals by the renewables industry (*AQB January p7*).

Scottish Renewables claims that council moratoria have cost Scottish biomass installers £4.5m in the last 12 months through 19 rejected projects. These decisions are estimated to have negated savings of 10,000 tonnes of CO_2 a year.

Jason Ormiston, chief executive of Scottish Renewables said, "Biomass moratoriums imposed by some councils are exacting a high price in terms of green business and climate change emissions."

PLANNING

AQ features in Bristol rap

Bristol City Council has been criticised by the Local Authority Ombudsman over procedures for approving a stadium redevelopment scheme. Air quality officers featured in the judgement – but council deficiencies did not influence the decision.

Thirty residents who live close to an established sports stadium complained that there were errors in the way the council dealt with a planning application for its redevelopment and enlargement. They said they would be caused an avoidable loss of amenity, and suffer increased levels of disturbance, inconvenience and air pollution from increased traffic.

On the latter, objectors to the scheme said that increases in traffic on match days would worsen pollution in the nearby AQMA. The report notes: "The football club commissioned an air quality impact assessment (AQIA) to support its planning application. The AQIA found that, even in the worst case scenario, the additional traffic generated by the stadium redevelopment would not result in national air quality objectives for key pollutants being exceeded. It concluded, therefore, that air quality in the locality would remain significantly unaltered by the development.

"The AQIA was considered by Officer F, a senior scientific officer, who specialised in interpreting air quality data (*Editor's note: we thought these reports were supposed to keep people anonymous!*). Officer F said that overall he was satisfied the club's assessment was sufficiently robust. He explained that the daily traffic resulting from the new development would be unlikely to have a significant impact on air quality because levels of nitrogen dioxide within the AQMA are normally considered in terms of annual averages and any increases occurring on match days alone would have only a marginal effect. He explained it is highly unlikely that hourly average concentrations of nitrogen dioxide would be exceeded at the annual average concentrations recorded in this area."

The Ombudsman concluded that officers were "entitled to exercise professional judgement and I see no reason to query the conclusions they reached". However there were procedural shortcomings elsewhere.

The Ombudsman added: "In my view, the maladministration I have identified was at the margins of the complex consideration that the council had to give to this development proposal."

● Report ref 07B02878 can be downloaded from www.lgo.org.uk

TRENDS

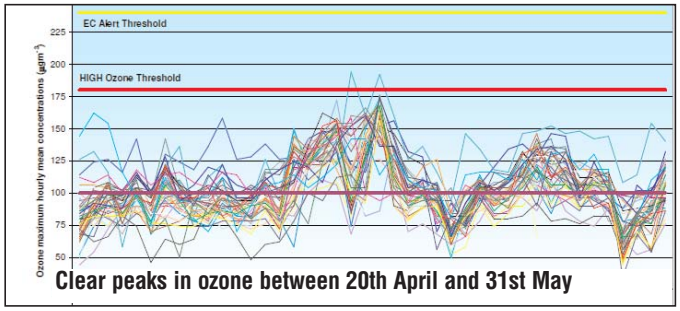
2008 ozone episodes unpicked by AEA

AEA has analysed two ozone episodes that took place last summer.

Moderate levels of air pollution were measured across the automatic urban and rural network during May and July 2008. During this period, high ozone levels were measured in Hull.

The first episode (75 sites reaching the moderate level) was influenced by air masses from Europe; the second (71 sites) was mainly of UK origin; a result of high spring and summer temperatures and still air throughout the UK. Both episodes were accompanied by elevated levels of particulate matter at some sites, probably with a significant component of secondary aerosols due to the weather conditions.

The highest hourly average at Hull Freetown during episode one was 194µg/m³ and during episode two was 182µg/m³. May 2008 was uncharacteristically warm, with temperatures in England on average 2.4 deg C higher than normal. July was also warmer than usual, but to a lesser extent. Both months experienced about 5% more sunshine than average.



Clear peaks in ozone between 20th April and 31st May

● *Air pollution forecasting: ozone pollution episodes report (May and July 2008)*, Rachel Yardley, can be viewed on /www.airquality.co.uk/archive/reports/list.php

(*Editor's comment: One can't quite believe that last summer – the one where the flowers, veggies and solar panels all failed to do their thing – could have been hot enough to prompt an ozone event. There are signs that this summer could be very hot – in which case it looks like ozone will get really bad and air quality may hit the headlines again*).

More emissions

Further data have been released from the 2007 National Atmospheric Emissions Inventory (NAEI) for UK air pollutants.

Emissions of all gases covered in the UK air quality strategy have fallen between 2006 and 2007, with the exception of benzene. There has been a continuation of the long term trend of a reduction in emissions of the majority of the pollutants in the inventory.

Emissions of sulphur dioxide, nitrogen oxides, NMVOCs and ammonia were released in Jan.

● www.defra.gov.uk/news/2009/090213a.htm

EUROPE

Compliance plans criticised

The Campaign for Clean Air in London (CCAL) has responded to Defra's draft submission to Europe explaining how it will meet PM_{10} objectives by 2011 (*AQB February p1*).

It states: "In CCAL's carefully considered view, the UK does not satisfy either of the pre-conditions for it to obtain a time extension to comply with limit values for PM_{10}.

"In particular, the UK fails to pass either the 'First condition' – measures to achieve compliance by the initial attainment date; or the 'Specific condition for PM_{10}' – site-specific dispersion characteristics, adverse climatic conditions or transboundary contributions. Both of these pre-conditions must be met if the UK is to obtain a time extension to comply with limit values for PM_{10}.

"CCAL would need to be completely wrong on every point made in this response in connection with the above pre-conditions if the UK is to be eligible for a time extension to comply with limit values for PM_{10}. This seems highly unlikely given that the questions are ones of fact.

"Furthermore the UK has made no reasonable effort yet to satisfy the 'Second condition' – measures to achieve compliance before the new deadline. It has not been helped in this regard by: its reliance on measures that the Mayor of London says he plans to scrap or suspend; its vague words about committing to work with the Mayor of London; and/or its obvious non-compliance over at least part of the London road network even by 2011 (i.e. six kilometres or is it 12 kilometres with modelling errors?).

"CCAL will therefore urge the Commission to 'throw the rule book' at the UK and reject its time extension notification (TEN) for failing to meet the conditions necessary for such a time extension unless the UK submits a wholly convincing and timely plan by the deadline set by the first written warning (i.e. Letter of Formal Notice). To be wholly convincing, such a plan must be backed by all necessary funding and immediate action to ensure that limit values for PM_{10} will be complied with sustainably throughout London by no later than 11 June 2011."

CCAL understands that the fines against the UK could total £300 million just in respect of PM_{10}.

Among other things, CCAL believes London needs a more targeted low emission zone focussing on the central area.

● Campaign for Clean Air in London website www.cleanairinlondon.org/

LONDON

Pollution 'driving people to early death'

The London Assembly has held a 'courtroom style' hearing into air quality in London.

Findings will be used to input into the revision of the London air quality strategy which is due early this year. A second Assembly inquiry meeting is due next month.

The committee heard that air pollution is believed to be responsible for around 1,000 premature deaths each year, but experts believe the actual figures could be significantly higher. Committee members heard that European targets for air quality – which London and the UK are not yet meeting – are not strict enough to protect people's health. "If nothing is done to improve air quality, Londoners' health will get even worse."

Significant new action is required to improve air quality in London. Simon Birkett of the Campaign for Clean Air in London, told the committee that technological and behavioural change, as well as political will is needed to drive this improvement.

Darren Johnson, chair of the London Assembly environment committee, said: "Reducing air pollution is not just about improving the environment in some abstract way. Today's shocking figures show that it's about saving lives. The Mayor and the Government need to get serious about this. Our investigation will look at potential ways to improve air quality so that London can be both a cleaner and healthier place to live in."

Darren Johnson had previously criticised the London mayor for dropping plans to tighten the London low emission zone (*AQB February p3*): "This is the height of irresponsibility and an absolute disaster for London's environment.

"The Mayor is talking green whilst condemning London to continuing pollution and premature deaths which have been linked to poor air quality. The decision also opens the way for the European Commission to succeed in its legal action against the UK Government for failing to meet the limit values for PM_{10} and to protect the health of Londoners".

"Substandard air quality in the capital already results in around 1000 premature deaths per year. For the past ten years the government has failed to take proper action, resulting in Britain's air pollution not improving fast enough to meet legally binding targets."

Darren Johnson continued: "The extension of the low emission zone to tens of thousands of vans next year was going to be a huge step towards cleaning London's air. Nothing else that the mayor is proposing comes close to dealing with the problem."

Darren Johnson (in his individual capacity as an Assembly member) is also writing to the European Environment Commissioner welcoming the start of infringement proceedings against the British Government's failure to comply with air quality limit values, designed to protect human health. Successful legal action by the European Commission could result in unlimited fines against the UK Government.

IN BRIEF

EIC supports LEZ

Commenting Mayor of London's announcement on the suspension of the next phase of the London low emission zone, the Environmental Industries Commission has warned that public health could be put at risk.

"In July last year Boris Johnson stated that "Londoners and visitors to our great city deserve to breathe air of the highest possible quality." The Mayor has shown scant regard for this commitment by announcing his intention to suspend the cornerstone of air quality policy in London – the LEZ."

Trucks cause damage

Lorries cause far more environmental damage and congestion than previously thought, claims European green lobby group T&E.

The report, by Dutch consultants CE Delft, found that lorries do not pay their full costs through existing taxes and charges. It found that existing charges of around €50bn only cover infrastructure costs while other external costs such as pollution, congestion, noise and accidents are not covered.

● *Are trucks taking their toll?* www.transportenvironment.org/tag/noise/news/

Rushlight win

Connaught Engineering has won the recent Rushlight Awards with its idea of using large capacitors and an auxiliary motor to capture spare energy in van engines via the fan belt (*AQB December 2008 p3*).

Rushlight is now rolling out a survey to all organisations developing clean technology in order to capture information and views on the main areas of cleantech where there is activity, their geographical location, what has helped and hindered progress and what developers need from government or locally now.

● *The Rushlight Awards 2008 Year Book* has just been completed and is now available on www.rushlightawards.co.uk

IN BRIEF

Vitamin D study

A study into the links between air pollution and vitamin D deficiency, and their impact on the respiratory health of children in east London, has received a £1.2 million grant from the National Institute for Health Research comprehensive Biomedical Research Centre.

ERG staff are playing a leading role in the EXHALE programme, (Exploration of Health and Lungs in the Environment). The study focuses on East London, where 18% of children have a diagnosis of asthma and where nearly 90% of the population lacks adequate levels of vitamin D, especially in the winter months.

Children from Tower Hamlets attending schools located close to main roads will be studied to define the effects of traffic emission reduction, using comparative pollution and respiratory health data from before the introduction of the low emission zone.

Ian Mudway who is leading the research on the primary school children over a four-year period, said: "We are focusing on children because damage done to their lungs by traffic pollution almost certainly persists, and makes lifelong lung problems. By measuring children's breathing and lung inflammation over several years and gathering genetic information, we will be able to establish links between respiratory health problems, pollution exposure and the role of genetic susceptibility."

Professor Frank Kelly who heads ERG's role in the study believes that the findings will help to inform government policies nationally and internationally as well as answer important questions about asthma. Kelly said: "London has one of the worst traffic pollution problems in Europe and local children have very high rates of vitamin D deficiency. I am confident that this study will lead to real advances in the understanding of asthma and the clinical care we can deliver to asthma patients."

VEHICLE EMISSIONS

Paint leads to NO_x fall?

Application of NO_x reducing coatings in Congleton has been coupled with a fall in NO_2 concentrations. Longer term monitoring is taking place to see whether the drop is because of the paint or coincidental.

Coatings firm Ecopurer has recently supplied its NO_x eating Activa coating to Congleton Borough Council. Activa is a titanium dioxide and potassium silicate based solution in water with photocatalytic, self-cleaning, pollution reducing, deodorising and anti-bacterial properties. It can be sprayed on surfaces.

Ecopurer says it is very pleased with the initial results of this trial. Rebecca Pointon of Congleton says: "The trials are going really well although it is very early days. The solution was applied to residential properties, pavements and street furniture down West Road, Congleton. NO_2 concentrations at the site prior to the application of the solution had an annual mean ranging between 55-68μg/m³, which are well above the annual standard set for NO_2 of 40μg/m³."

She continued: "Early indications demonstrate nitrogen dioxide levels at the site have reduced to 43μg/m³. The relevant background site has not seen a reduction in NO_2 concentrations.

● www.ecopurer.com

Spraying on the NOx eating coating in Congleton

PLANNING ACT

More details emerge on planning changes

Further details have emerged on how the Planning Act will affect major developments.

The Planning Act sets out the framework whereby an Infrastructure Planning Commission (IPC) will use National Policy Statements (NPS) to decide on nationally significant infrastructure projects such as airports and power stations. Groups such as Epuk have raised concerns that the new regime will make it impossible to enforce nuisance action against larger projects (*AQB October p6*).

DCLG's Patrick Erwin told an Epuk conference last month that secondary legislation and statutory guidance is now being developed to flesh out the new regime and its processes (eg. applications, determinations, fees; habitats, EIA and transitional arrangements). He defended the changes, saying that sustainable development is at heart of process (the secretary of state having specific duties in this respect).

National Policy Statements will be subject to public consultation and Parliamentary scrutiny, and for specific projects or issues the IPC can set up hearings with cross examination, with decisions subject to judicial review.

Irwin outlined a provisional timetable:

● Now: Consultation on National Policy Statement statutory consultees;
● Spring: recruitment starts for IPC and consultation on regulations and guidance (phased);
● Summer 2009: Drafts of first tranche of NPSs published;
● Autumn 2009: IPC to begin advising applicants;
● Early 2010: First tranche of NPSs designated;
● Later in 2010: IPC to begin determining applications.

Irwin said: "The new regime is designed to give faster (fairer and more transparent) decisions in typically less than 12 months. For this to work there will need to be high-quality (ie. complete and robust) applications when they are submitted to IPC."

He suggests that pre application work will need to be improved, for instance environmental impact assessments will need to be done "thoroughly and demonstratively" during the design/options phase to minimise the negative impacts of the development.

Stansted Inquiry

A preliminary hearing has taken place as part of the Planning Inquiry for the expansion of Stansted Airport.

The meeting was held to discuss the timing, duration and other aspects of the proposed Inquiry into a second runway. Stansted will be heard through the old public inquiry system, the Planning Act means that future airports and infrastructure projects will be fast tracked through the Infrastructure Planning Commission (*see news, above*).

Inquiry Inspector Andrew Phillipson heard detailed representations from Stop Stansted Expansion, local authorities, Stansted airlines, BAA and others. There was a consensus that between 144 and 200 sitting days would be required, equivalent to an inquiry lasting between 15 and 20 months.

● www.stopstanstedexpansion.com

AVIATION

Pond dippers in airport warning

An academic at Edge Hill University has issued a health warning against the Government's planned expansion at Heathrow Airport based on analysis of lakes.

After carrying out what is claimed to be the first NHS funded research into air pollution chronology – how pollution has changed over time – Dr Ann Worsley, reader in physical Geography at Edge Hill, said that based on analysis of areas such as a pond at Speke Hall, adjacent to Liverpool's John Lennon Airport, evidence clearly shows that pollution has been ongoing from the early 19th century and although its composition has changed, it is still significant today.

Worsley said: "We hear much in the press about carbon being emitted into the atmosphere but very little about the other pollutant emissions. The 'cost' to health services from the emissions by transport and industry may actually be considerable."

She added: "For our ponds work, the main message is that we have the first datable chronology for air pollution that covers the period from 1750 onwards. It shows that the nature of air pollution has changed significantly since the Clean Air Acts [and subsequent apparent cleaning of air] of the 50s – particle size is much smaller [< 10 microns] and loaded with lead, zinc etc and is chiefly derived from a mixture of newer types of industrial output but more importantly by increased output from road and air traffic. This has serious implications for health."

She believes the pond work is "hugely significant for health and for planning around airports given current projections for increasing flight numbers and expanding access to and from airports". "We quickly need to repeat similar work around Heathrow – but it needs funds and time."

● Annie Worsley, Edge Hill University, email Worsleya@edgehill.ac.uk

AVIATION

Heated Parliamentary debate on Heathrow

A heated debate in the House of Commons centred on air quality and noise aspects of the Heathrow expansion decision announced in January (*AQB February p5*).

A motion against expansion was narrowly defeated by 297 to 278 (relying on votes of MPs from the regions).

The Government was challenged by two main protagonists. Theresa Villiers (Chipping Barnet) told the Commons: "I am calling on the Government not to try to wriggle out of the obligations that they have undertaken under the air quality directive; they signed up to it. I am afraid that this is one environmental precondition that the Government will find it impossible to wish away."

Local MP Justine Greening (Putney) commented: "Air quality is important, and we know that the Government will allow the UK to breach the EU air directive, which will become mandatory, and sets limits for 2010. The Government intends to ask for a derogation from it, yet Defra's assessment of environmental risk on air quality was high."

She quoted the department as saying: "Mitigation measures identified to achieve air quality targets are too costly or impractical to implement, or politically unacceptable".

She added: "The Environment Agency said that the Government's plans could increase morbidity and mortality rates around the airport. I have tried to follow that up with the Secretary of State to ascertain how on earth a responsible Government can ignore their own Environment Agency's warnings about public health and go ahead with the project.

"I received a letter from him yesterday. Even he now admits that public health is at risk. The letter states 'the work done by AEA Energy & Environment, a respected organisation (as if the Environment Agency were not) suggests that such fears have been greatly exaggerated."

LOCAL GOVERNMENT

Unitary arrangements slowly take shape

A handful of authorities are going unitary from 1st of April.

Some authorities have sorted out their new organisations (with new responsibilities and redundancies already agreed) while others appear to be behind. Defra's helpdesk has stated that councils going unitary may report as districts until they cease to exist on 1st April. "There may be an extension to July (exact date unknown) to allow them to report as a unitary authority. This must not be used as an excuse for councils to extend their district reporting deadline." It is understood that AQMA designations will carry through.

Seven areas are affected:

● Shropshire: Bridgnorth, North Shropshire, Oswestry, Shrewsbury & Atcham and South Shropshire combine;
● Wiltshire: Kennet, North Wilts, West Wilts combine;
● Northumberland: Alnwick, Berwick, Blythe Valley, Castle Morpeth, Tynedale and Wansbeck combine into one;
● Durham: Chester Le Street, Derwentside, Durham City, Easington, Sedgefield, Teesdale and Wear Valley combine;
● Cornwall: Caradon, Carrick, Kerrier, North Cornwall, Pen-with and Restormal combine;
● Cheshire will be split into two: West (Ellesmere Port and Neston, Chester and Vale Royal), and East: (Crewe and Nantwich, Congleton and Macclesfield);
● Bedfordshire will split into two: Bedford City Council and the remainder.

IN BRIEF

Volatile correction model report out

The methodology behind the ERG Kings College London volatile correction model for correcting Teom readings has been published.

The report also includes an an assessment of the automatic urban and rural monitoring network FDMS measurements from instruments deployed during 2007 and whether these measurements are suitable for use in the volatile correction method on a national scale.

● *Volatile Correction Model (VCM) for PM_{10} Application to hourly time resolution and AURN FDMS purge measurements*, David Green, Timothy Baker and Gary Fuller can be viewed on www.airquality.co.uk/archive/reports/list.php

Dual fuel order

Alternative fuel specialist Clean Air Power has received an order from Sainsburys for five Genesis dual-fuel installations in trucks.

Sainsburys started a successful trial of Clean Air Power's technology in August 2007 and in August 2008 began to operate one of its Mercedes-Benz Axor Euro 3 vehicles fitted with Clean Air Power's Genesis dual fuel combustion technology.

The vehicle runs daily to Sainsburys new flagship green store in Dartmouth, Devon from the Sainsburys Emerald Park depot near Bristol.

The Dartmouth vehicle and the others which Sainsburys has ordered will be fuelled using a combination of diesel and biogas (methane produced from a landfill site and cleaned before use).

This order is for Clean Air Power's Genesis system which is retrofitted to operators' existing vehicles. Around 50% of the diesel used can be substituted by methane, whereas an interfaced product will deliver a substitution rate of up to 90%.

● More details www.cleanairpower.com

IN BRIEF

Better regulation?

A series of briefing notes have been released over the past few months by the better regulation office aimed at local authority regulators.

One note introduces the *Regulators' compliance code* and compares it with the current *Enforcement concordat*. Many local authorities will already be voluntarily following the requirements of the concordat. The guide looks at what else regulatory services need to do to comply with the new statutory requirements of the code.

A second guide sets out the recent changes made to the local government performance framework. The new local performance framework has reduced the number of performance indicators against which local authorities will be assessed, and also includes a number of indicators that reflect the national enforcement priorities and a better regulation indicator.

This briefing is in two sections. Section one sets out the new local performance framework. Section two provides detail of the new national indicators for local authority regulatory services and the implications for setting service priorities. Within the new set of national indicators are five that relate directly to regulatory services, including NI194 on air quality.

Meanwhile the Local Better Regulation Office has also polled business and consumers on the performance of local regulators – just under two-thirds of businesses are satisfied with the service provided by their council

- The new local performance framework: LBRO briefing for local authority regulatory services, Applying the regulators' compliance code and enforcement concordat and the survey conducted for the Local Better Regulation Office can be viewed on www.lbro.org.uk

REGULATION

LAPC unpicked in latest review

Local authority pollution control statistics are revealed in the latest statistics for England and Wales.

The yearly survey of LAPC regulation covers smaller Part B processes and medium size part A2 installations. In 2007/2008, the survey was completed by all of the local authorities and port health authorities across England and Wales. The percentage of authorities choosing to complete the electronic version of the survey has increased this year to 90% from 84% in 2006/2007, This year, authorities were asked to list the time taken to complete both parts of the survey. It took an average of 6.5 hours to complete the Part B survey electronically, compared to an average of 6.1 hours to complete the paper form.

Key findings from analysis of Part B processes include:

- This year's and last year's results are unusual because of the large influx of applications for dry cleaners. There were 1,104 applications received during 2007/2008, which is a 70% decrease on the 3,725 applications received during 2006/2007;
- As expected, given that all dry cleaners have now been granted permits, the number of permitted installations throughout England and Wales has increased, rising to 18,913 in 2007/2008. This year's figure represents an increase of 15% from the 2006/2007 survey;
- Service stations remain by far the most prevalent category with 6,255 permitted installations – 33% of the total number of installations – despite the numbers of service stations dropping by 80, a 1% decrease;
- The second biggest category is now dry cleaners, which has increased dramatically over the last five years. There are now 3,566, a 208% increase from 1,157 in 2006/2007;
- During 2007/2008, nine prosecutions were reported and seven formal cautions were issued. As of 31st March 2008, there were four prosecutions pending, while five were successful. The successful prosecutions had fines totalling £33,155. This is a substantial rise on last year's figure of £1000 in fines, although still not as high as fines for the preceding years, which had steadily risen.

Key findings from analysis of Part A2 installations include:

- There were 393 authorised A2 installations in England and Wales in 2007/2008;
- The most prevalent type is coating which accounts for just over a third of the 393. The second most common installation is ceramic with 25%;
- The West Midlands region reported having the most authorised A2 installations, namely 79; conversely North Wales reported having only 10 A2 installations;
- 87 authorities have one permitted installation, 72 have two or three installations, and 24 authorities have more than three installations;
- Nine authorities had no permitted installations.
- More details of the survey on www.defra.gov.uk/environment/ppc/

REGULATION

Kensington wins apology over duff data

Kensington and Chelsea Council has hit back at Defra officials who have accused the council of not properly inspecting Part B premises, which include dry cleaners, petrol stations and paint sprayers.

In a letter sent to the environment secretary Hilary Benn, the Royal Borough said it was "astonished" to find that the council has effectively been "named and shamed" for apparently doing nothing to regulate the 35 small Part B premises for which it is responsible.

The council claims it followed Defra guidance to the letter in its approach to inspecting these premises.

The council added: "Defra has got this wrong. If they issue guidance that says dry cleaners don't need a risk assessment then they should not be surprised when it doesn't get one.

"This is the second occasion when Defra has got their statistical information wrong and listed the council as a poor performer on pollution regulation.

"We are pleased they have admitted their error and apologised. We take all our inspections seriously and expect the same level of seriousness and accuracy from the body that issues the guidance in the first place. If you must highlight poor performing councils then you should make sure your own performance is above criticism, otherwise trust in Government figures could be lost."

LAPC

Guidance manual amendment out

The local authority pollution control *General guidance manual* has been updated.

The manual comprises guidance on the policy and permitting procedures for activities subject to LA-IPPC and LAPPC under the Environmental Permitting Regulations 2007 from 6 April 2008 onwards. It is statutory guidance to local authority regulators, which they must have regard to.

It aims to guide firms undertaking or planning to undertake relevant activities on their legal obligations. It is designed to be useful to members of the public interested in industrial pollution control, examples and specimen documents are provided where possible.

- www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/manuals.htm

LAQM

10-step plan for consultants

Performance of private sector consultants carrying out consultation for local authority review and assessments has been studied by the University of the West of England. New guidance is proposed.

UWE notes that the Local Air Quality Management (LAQM) regime, which requires consultation at staged intervals, is one of the largest locally-based environmental consultation initiatives undertaken in the UK. While local authorities are under a duty to consult with the public, in many cases the actual work is carried out by consultants.

A questionnaire survey was distributed to 150 UK consultancies involved in the market. A 33% response rate was achieved. Focus groups and more detailed questions followed, and the results used to develop guidance.

The report says: "The purpose of the guidance is to provide consultants with information and tools that will be helpful in undertaking effective consultation on air quality matters – particularly in relation to LAQM and for the air quality aspects of EIA."

The guidance document is divided into two parts. The first part discusses how consultants currently undertake air quality related consultation on behalf of either public or private sector clients. The second part presents a model for 'better practice' in air quality related consultation in the form of a ten step plan for consultants, focusing on the client and consultant relationships.

Five key issues emerged (listed with typical consultancy comments):

- Limited time frame to carry out the consultation – "Being brought late in to the process limited the scope of the consultation methods we could use.";
- Financial resources – "Client wishes exceed the budget";
- Lack of support from the client in defining the scope of the activity – "Sometimes it is difficult to get a client to engage with us once the contract is awarded";
- Opposition from the public to the project – "We feel the client only brought us in when problems emerged";
- Difficulty in generating public interest in the consultation – "We held a well-advertised public meeting but no one turned up".

From these issues, a ten point plan was proposed:

- Encourage the client to prepare for the consultation process by building internal relationships and communicating in a timely and effective way;
- Early appointment of a consultant and defining explicitly the roles and responsibility of the client and the consultant, and adhering to them;
- Co-definition of the project scope;
- Provide assistance in locating additional funding sources;
- Advising on the allocation of the project budget;
- Early and timely access to information;
- Seek opportunities for innovative consultation;
- Maintain engagement throughout the lifecycle of the project;
- Framing consultation outputs;
- Evaluate and review the form, function and outcome of the consultation process.

A ten step plan for environmental consultancies: Mediating consultation: Private sector consultancies engagement in air quality consultation can be downloaded freely at: www.uwe.ac.uk/aqm/Mediating_Consultation

COURTS

Planning permission no bar to nuisance

A decision in the High Court has reaffirmed that an injunction can be an appropriate remedy for nuisance even if planning permission has been obtained for the activity.

The decision, focussing on noise from the Croft motor racing circuit in North Yorkshire, has implications for activities making dust. Campaigners against cement works or incinerators may try to use the test case to prevent what they claim to be dust nuisance. Cank (Campaign Against the New Kiln at Padeswood in Flintshire) is known to be gathering resident support to obtain an injunction against the works.

In the Croft decision in the High Court, residents asked for an injunction and damages against the race track owners for excess noise. At an earlier hearing, the judge awarded the residents damages but refused to serve an injunction to stop the day-to-day use of the track. Because the residents did not seek to close the circuit down, rather limit activities to that allowed by the planning permission, the appeal court judge considered an injunction was appropriate.

The judge said: "This case appears to me to be one of substantial injury to the claimants in their enjoyment of their properties. The grant of an appropriate injunction so as to restrict the defendants to their core activities would not be oppressive of them."

Mike Stigwood of MAS Environmental, who acted for the residents at an early stage, commented: "The council would not take statutory nuisance action despite it being seen as a nuisance.

"This is a good decision which makes it clear that the existence of planning permission is not authority to cause unacceptable impact or a test of what is reasonable. It also confirms that the suitable remedy in a civil action is that the nuisance should normally be brought to an end and not just to compensate. This injunction is in many respects synonymous with an abatement notice."

The claimants' solicitor was Paul Stookes at Richard Buxton. He said: "The Court of Appeal has agreed with the High Court that the grant of planning permission cannot authorise an unlawful act such as nuisance."

- Watson v.Croft: email *AQB* for a copy of the decision

IN BRIEF

Odours: £7,000 fine

The operators of a Cumnock landfill site have been fined £7,000 following a significant number of public complaints regarding odours at the site.

The company pled guilty at Ayr Sheriff Court says the Scottish Environmental Protection Agency.

Barr Environmental Limited, which operates Garlaff Landfill site, was charged with contravening a permit condition by carrying out operations in such a manner that odours arising from the installation were detected outside the permitted boundary.

SEPA officers had been receiving a number of complaints about offensive odours around the site at Cumnock. SEPA held regular meetings with the company to discuss the problem and attended community liaison meetings.

Although remedial work done on the site led to a drop in the number of complaints, the number started to climb again in January and February 2008.

Despite the level of inspection and enforcement during the start of 2008, complaint levels continued, and significant offensive odours were detected by officers off-site.

SEPA's investigating officer, Richard Birch, said: "The problems at Garlaff were the result of damage to the landfill cap on cell one. The types and proportions of waste contained in this cell meant there was a high concentration of hydrogen sulphide, which is highly odorous, in the landfill gas.

"Barr Environmental Limited did take steps to reduce the problem, but offensive odours off site continued. The loss of amenity to the local population has been significant, not only have people been unable to use their gardens, but the odours have also entered houses. The enjoyment of nearby recreational facilities has been affected, and there have been reports of the smell making people feel unwell."

- www.sepa.org.uk

Guidance out: USAs loom

There are few surprises (including the lateness) in the new technical and policy guidance just released

Defra and the devolved regions' technical guidance, and English policy guidance, is finally out.

As is traditional with these things, it is late. Also as is tradition, despite being late, local authorities will be expected to get things done on time and will receive the usual 'encouragement' (non financial) from ministers.

Time (and money) are both short – local authority updating and screening assessments are due at the end of next month (April 30th), and all are expected to do them using the new technical guidance as their template. No doubt councils will be told that the final technical guidance does not differ much from the draft guidance released last year (*AQB August p8*) but if that is the case, one wonders why Defra has sat on it for so long. It was promised – faithfully – before Christmas (*AQB December p1*).

Guidance is important to local authorities. Despite always being late, it is generally well regarded and useful to those trying to meet the yearly demands of the air quality management timetable. Revamps such as this come every few years, the last major change was in 2003 (and before that in 2000 and 1998).

As the UK enters its 'fourth round' of reviews and assessments, councils across the UK will rely on the 300+ page technical guidance document (TG(09)) and supporting practice guidance (see box). Policy guidance has also been released by Defra. Scotland, Wales and Northern Ireland will have their own sets of policy guidance released in the coming weeks.

The key changes introduced include web reporting (but not in automated 'tax return' style because of difficulties), biomass, canyons, airports, railways and poultry farms.

There is a move away from working through pollutant by pollutant towards looking at sources which will save a lot of repetition within reports. There is continued refinement of advice on monitoring.

The guidance notes: "All aspects of the technical guidance are brought together in this one document. The guidance has been completely restructured in some parts, reflecting feedback from local authorities during the previous rounds of review and assessment. The intent is to simplify the process, particularly in the preparation of progress reports and updating and screening assessments. This document supersedes all previous technical guidance documents and will be updated via supporting websites."

In more detail, the new technical guidance introduces the following key changes as compared to the previous guidance:

Source based rather than by pollutant:
Previously an authority would have to work through each of the seven pollutants, one by one, discussing sources. For many of the pollutants, for instance carbon monoxide, there were no sources so the listing was a bit of a waste of time. Now authorities are urged to list sources and relevant pollutants. No sources, no pollutants, no listing needed.

Defra says: "While the updating and screening assessment checklists are broadly the same, they have been completely re-ordered, so that they follow a source-by-source approach.

"In circumstances where a local authority only has potentially significant road traffic sources, the assessment is done once for both NO_2 and PM_{10}. Where other potentially significant sources are identified, again the assessment need only be completed once.";

Monitoring:
A newly emerging area while the guidance was being drawn up was particle monitoring. Teoms are no longer favoured for measuring particles, intercomparisons suggested that FDMSs (or Bams) should be used. Advice has been updated to recommend that authorities still using Teoms rely on the Kings College London Volatile Correction method to adjust data into gravimetric terms (*AQB August 2008 p1*);

NO_x:NO_2; primary NO_2:
Another key emerging area has been the increased understanding of the emergence of rising emissions of primary NO_2 from newer technology vehicles.

This rising proportion, despite falls in total NO_x emissions, is likely to be why so many roadside sites are seeing static, or even rising, NO_2 concentrations;

Vehicle emission factors:
Technical guidance has been held up to a certain extent by DfT dithering on revised emission factors, these were supposed to have been ready last year and used in DMRB and technical guidance, but are still not finalised. New emission factors are well overdue, the old emission factors have been accused for being very optimistic in terms of future improvements;

Updated background maps split by source:
These new maps make it easier for authorities to deduct road source emissions when compiling model inputs to avoid double counting of emissions;

Biomass:
There has been a huge furore about biomass during the lifetime of the technical guidance revamp (*AQB January p7*). There is now dedicated guidance for councils who believe that single or combined biomass installations could jeopardise efforts to improve air quality;

Exposure reduction:
This is a more a matter for central government than local government in that it is the national governments that are required to cut background levels of pollutants.

But in the end, the national government relies on local action, and councils would be foolhardy to ignore exposure reduction – some councils have been precautionary on biomass citing exposure reduction requirements;

Rail: (see box, right);

THE R&A TIMETABLE

Year	USA	Progress Report	Detailed Assessment
Round 4 - completion dates:			
2009	30th April 2009	–	Whenever necessary
2010	–	30th April 2010	Whenever necessary
2011	–	30th April 2011	Whenever necessary
Round 5 – completion dates:			
2012	30th April 2012	–	Whenever necessary
2013	–	30th April 2013	Whenever necessary
2014	–	30th April 2014	Whenever necessary
Round 6 – completion dates:			
2015	30th April 2015	–	Whenever necessary
2016	–	30th April 2016	Whenever necessary
2017	–	30th April 2017	Whenever necessary

The next updating and screening assessments are to be completed by all local authorities by the end of April 2009. If these identify the need for a detailed assessment, then this should be completed within 12 months of the date they are initiated.

All authorities should complete a progress report by the end of April 2010, regardless of whether they are undertaking a detailed assessment or not.

Authorities will now have to load their updating and screening assessments online on a new website (see above). Completed reports should be filed electronically using the web-based system that has been provided by Defra and the Devolved Administrations (but 'tax return' style filing has proved too difficult to organise).

The web-based system involves local authorities downloading a proforma USA report from the internet which is then completed off-line. The format of these proforma follows the checklist items that are provided. It is possible to paste in any relevant data, maps or graphs. When complete, the report should be submitted electronically.

Canyons:
There is greater clarification (in fact a relaxation) in traffic flows and distance to houses in this new advice;
Congestion, non-exhaust emissions; shipping; height adjustments; nomograms:
Further guidance is offered on these issues;
Electronic filing: (see box above).

The updating and screening assessment is intended to identify changes that have occurred since the previous round of review and assessment. The focus is therefore upon new sources (for example, new roads, new industrial installations etc), sources that have changed significantly (for example, changed traffic flows, changed industrial installations, etc), or sources that were not previously considered (for example, where there is new exposure).

There is no need to provide information on sources that have not changed and were adequately covered in previous rounds of review and assessment.

The format of progress reports remains effectively unchanged from the previous rounds, but completed reports should be filed electronically using the web-based system that has been provided by Defra and the devolved administrations. The intent has been to simplify the process for local authorities.

The web-based system allows authorities to download a proforma progress report, which is then completed off-line. The format of this proforma follows a checklist that is provided.

RAILWAY AUTHORITIES

Authorities with rail lines with a heavy traffic of diesel passenger trains where the estimated annual mean background nitrogen dioxide concentration (in 2008) is greater than 25 µg/m^3

Birmingham
City of Bristol
Congleton
Coventry
Halton
Leeds
Liverpool
Manchester
Reading
Rotherham
Salford
Sheffield
Slough
Solihull
South Bucks
South Gloucestershire
South Ribble
St Helens
Stockport
Swindon
Trafford
Vale Royal
Warrington
Wigan
Windsor and Maidenhead
Ealing
Hammersmith & Fulham
Hillingdon
Kensington & Chelsea
Westminster
City of Edinburgh
City of Glasgow
Cardiff
Neath Port Talbot
Newport

WHAT HAS BEEN RELEASED?

- Technical guidance TG (09) on local air quality management (all UK);
- Policy guidance PG (09) (England only);
- Practice guidance on economic principles for the assessment of local measures to improve air quality;
- Practice guidance on low emission zones;
- Practice guidance to local authorities on measures to encourage the uptake of low emission vehicles;
- Practice guidance to local authorities on measures to encourage the uptake of retro-fitted abatement equipment on vehicles;
- Practice guidance worked examples;
- New and revised tools to accompany the technical guidance (www.airquality.co.uk/archive/laqm/tools.php)

Documents are available from www.defra.gov.uk/environment/airquality/local/guidance/index.htm

WHAT HAS CHANGED?

Jack Pease tried to spot what has changed between the draft which appeared last summer and the final document just released:

At first glance, very little has changed. Early on a blooper referring to the forthcoming round as the 5th round has disappeared, otherwise it's mostly cosmetic.

We did spot a slight loosening of early advice pushing authorities away from the Teom. The draft guidance said that "Teoms cannot strictly be used" and this phrase has disappeared, partly because of the now-proven success of the volatile correction method that allows old Teoms to be retained. Bams get a mention too, keeping Enviro Technology happy.

Some narrative on LTp reporting appears to have gone, no doubt anticipating the near collapse of air quality content in the current (third) LTp round (see news, page one). Perhaps because the LTp guidance commits authorities to very little, the final air quality guidance tells authorities that they have to produce yearly air quality reports for Defra even where air quality is wrapped up in an LTp.

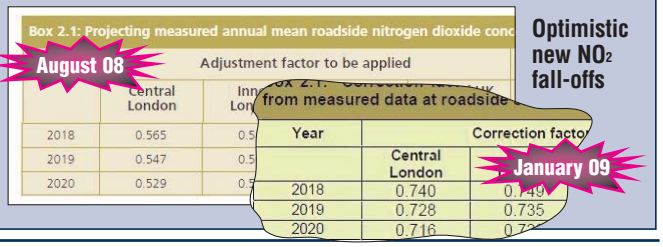
There is increased emphasis on the Clean Air Act – councils need to dust off the old regulations and make sure they are working. This has been prompted by the fears that widespread uptake of biomass could jeopardise air quality improvements.

If there was a common theme to earlier guidance it was 'quantify, quantify, quantify'. The practical difficulties of trying to quantity some of the woolly aspects of air quality action plans seems to have sunk in and final policy guidance has scrapped quite a lot of references to quantification leaving a mild encouragement to quantify, rather than frantic urging.

References to Powershift and Cleanup have been removed, reflecting the disappearance of cleaner vehicle grants. Authorities are urged to make their review and assessments reports available electronically, ie on council websites.

Box 2.1 contains fall-off factors for NO_2 up to 2020. These have been cut by about a quarter, ie an assessment done today will look 25% cleaner than it did if you used the box contained in the draft guidance six months ago. Magic.

This will be great for those keen to make areas appear cleaner in 2020 (eg Heathrow) but there is deep suspicion that the levels of fall-off cannot be assumed, given that annual mean NO_2 has stopped dropping in recent years.



Optimistic new NO_2 fall-offs

SCIENCE SHORTS

Genetics mutated

In early editions of our review of air quality and genetics (*AQB January p9*), we wrongly credited Professor David Cooper's article to *Mutation Research* – it should have been *Human Genetics*.**www.springerlink.com**

Small effect

Adult volunteers showed modest impacts when subjected to polluted air, Californian researchers say.

31 adult volunteers (17 healthy, 14 asthmatic) were exposed in a exposure chamber to concentrated ultrafine particles collected in Los Angeles suburbs. Concentrations were up to eight times that of ambient particle levels.

Healthy and unhealthy volunteers appeared to be unaffected over a large range of medical end points – effects were small, without obvious pattern and little higher than might have occurred by chance.

Exposures of healthy and asthmatic volunteers to concentrated ambient ultrafine particles in Los Angeles, *Inhalation Toxicology*, Vol. 20 pp533-545.

Leukaemia link

Researchers in Taiwan say they have found a link between childhood leukaemia and traffic pollution.

A case control cohort was established based on childhood deaths in Taiwan from 1995 to 2005. The air quality records NO_2) from the child's residence address were then assessed as an indicator of a subjects exposure to motor vehicle emissions.

Researchers said: "The results showed that there was a significant exposure response relationship between traffic exposure and the risk of leukaemia among young children."

Childhood leukaemia development and correlation with traffic air pollution in Taiwan using nitrogen dioxide as an air pollutant marker, Hsu-Fen Chiu et al, *Journal of Toxicology and Environmental Health, Part A*, Vol. 71, pp434-438.

TRAFFIC POLLUTION

Pollution may cause asthma

A study suggests that traffic pollution may cause asthma as a result of exposure during gestation.

Pollution is well known to trigger existing asthma but there is little firm evidence that it can actually cause asthma. A new study by New York researchers suggest that exposure during pregnancy may cause DNA changes that lead to the development to asthma in later life, with PAHs considered the culprit.

Data was based on a longitudinal study of 700 children in New York City where asthma prevalence (at 25%) is among the highest in the US. Mothers were assessed for prenatal exposure to PAHs, and umbilical cord samples of a small group of 20 were analysed for evidence of PAH markers in DNA – a marker called ACSL3 was found to be the best for use in the study.

ACSL3 was then investigated in a larger group, and damage effects could be seen where there was maternal airborne PAH exposure exceeding 2.41 ng/m^3 (the effect being determined by children showing asthma symptoms by the age of five).

Researchers say: "This exploratory report provides a new blueprint for the discovery of epigenetic biomarkers relevant to other exposure assessments and/or investigations of exposure-disease relationships in birth cohorts. The results support the emerging theory of early origins of later life disease development."

Relation of DNA Methylation of 5'-CpG Island of ACSL3 to Transplacental Exposure to Air-borne Polycyclic Aromatic Hydrocarbons and Childhood Asthma, Frederica Perera et al, *PLoS ONE* 4(2): e4488. doi:10.1371/journal.pone.0004488

PARTICLES

Diabetes link to traffic pollution

US researchers think there may be a link between diabetes and air pollution.

Using obese mice, fine particle ($PM_{2.5}$) exposure was found to increase insulin resistance – ie diabetes.

Mice were fed a high fat diet for ten weeks to make them fat, and then split into two groups, one breathing filtered air, the other breathing $PM_{2.5}$ air for 24 weeks.

Researchers say: "Our findings provide a potential biological basis for the link between particulate air pollution exposure and type 2 diabetes mellitus and further our understanding of the mechanisms involved in air pollution–induced cardiovascular diseases.

"Currently, the US air quality standards mandate mean annual concentrations of 15.0µg/m^3 and daily concentrations of 35 µg/m^3 $PM_{2.5}$ annual levels seen in cities in Latin America, China, and India average 100 to 150µg/m^3, which are roughly 10- to 15-fold higher than concentrations in the United States and comparable to the levels accomplished in our study.

But the adjusted average concentration of $PM_{2.5}$ after accounting for the duration of exposure per day (6 h/d, 5 d/wk) is well below the current National Ambient Air Quality Standard recommendations of 15µg/m^3 in the United States."

Ambient air pollution exaggerates adipose inflammation and insulin resistance in a mouse model of diet-induced obesity, Qinghua Sun et al, *Circulation*, 2009;Vol. 119; pp538-546

TRAFFIC POLLUTION

Urban particles suppress mice lungs

Ambient levels of urban particles have been found to suppress the growth of lungs on young mice.

Two open topped chambers were placed 20m from a street with heavy traffic in Sao Paulo 24 hours a day for eight months. One was fed unfiltered air and the other, filtered air . The latter had typical $PM_{2.5}$ levels of 2.9µg/m^3 as compared to the unfiltered chamber which has average levels of 16.9µg/m^3.

Exposure of the parental generation of mice occurred from the 10th to 120th days of life, after mating. some offspring were swapped so there were non exposed, exposed before gestation but not after, after gestation but not before, and exposed before and after gestation. Lungs were subsequently analysed to compare their surface area and volume.

Researchers found: "Mice exposed to $PM_{2.5}$ pre- and post-natally presented a smaller surface to volume ratio when compared with non-exposed animals. It seems a combination of exposure to ambient particles is necessary during both before and after periods to alter lung development."

Mice were also seen to develop significant alterations of alveolar structure and elastic properties.

Chronic exposure to ambient levels of urban particulates affects mouse lung development, Thais Mauad et al, *American Journal of Respiratory and Critical Care Medicine*, Vol. 178, pp721-728.

LOCAL ENVIRONMENT

Green is good for you

People living in green areas are more healthy, Glasgow researchers suggest.

The UK pre-retirement population was split by income deprivation and exposure to green space: "We obtained individual mortality records (366,000) to establish whether the association between income deprivation, all-cause mortality, and cause-specific mortality (circulatory disease, lung cancer and intentional self harm) in 2001-05 varied by exposure to green space measured in 2001."

Researchers found that health inequalities related to income deprivation in all-cause mortality and mortality from circulatory diseases were lower in populations living in the greenest areas (incidence rate 1.93 in the least green areas to 1.43 in the most green).

"Populations exposed to the greenest environments also have the lowest levels of health inequality related to income deprivation. Physical environments that promote good health are important to reduce socio economic health inequalities."

Effect of exposure to natural environment on health inequalities: an observational population study, Richard Mitchell et al, *The Lancet*, Vol. 372 pp1655-60.

PARTICLES

Turkish researchers blame all PM fractions

Turkish researchers say coarse, and fine particles are all responsible for causing asthma and respiratory diseases.

The study used data on respiratory hospital admissions on children under 15 years and air pollutant concentrations (PM_{10}, $PM_{2.5}$ and $PM_{10\text{-}2.5}$). A bidirectional case crossover study found significant increase in hospital admissions among children for asthma, allergic rhinitis, upper and lower respiratory diseases with all fractions of PM_{10}.

The highest association noted was an 18% rise in asthma admissions with a 10% rise in $PM_{10\text{-}2.5}$ (coarse particles) on the same day of admissions. A 10μg/m³ increase in $PM_{2.5}$ were 1.15 and 1.21 respectively for allergic rhinitis and asthma.

"Our study suggested a greater effect of fine and coarse particle on asthma hospital admissions compared with PM_{10} in children."

Particulate matter ($PM_{2.5}$, $PM_{10\text{-}2.5}$, and PM_{10}) and children's' hospital admissions for asthma and respiratory diseases: a bidirectional case crossover study, Lokman Hakan Tecer et al, *Journal of Toxicology and Environmental Health*, Part A, Vol. 71 pp512-520.

PARTICLES

...while coarse particles cleared of blame

Coarse ($PM_{10\text{-}2.5}$) particles appear not to be to blame for causing cardiovascular admissions.

US researchers used a database of 108 US county medical districts with daily cardiovascular and respiratory data associated with coarse particle exposure controlled for $PM_{2.5}$. Medical data was compiled from state Medicare records.

A 10μg/m³ increase in coarse particles was associated with a 0.36% rise in cardiovascular disease admissions on the same day, but the effect became insignificant once controlled for $PM_{2.5}$. For respiratory admissions, a 0.33% rise also was considered insignificant.

Coarse particulate matter air pollution and hospital admissions for cardiovascular and respiratory diseases among Medicare patients, Roger Peng et al, *Journal of the American Medical Association*, Vol. 299 no 18 pp2172-2179.

TRAFFIC POLLUTION

Particles may affect birthweight

Californian researchers have compared birthweight with particle pollution.

To examine the associations between particulate matter and birthweight, US birth records for singletons delivered at a 40 week gestation in 2001-2003 during the months of March, June, September and December were linked to quarterly estimates of pollution exposure. Annual, nine month and trimester specific exposures were assigned. The researchers found a small association between coarse particle exposure and birthweight (-13g per 10μg/m³ increase) after controlling for maternal factors.

"The associations were slightly weaker when linked to multiple exposure rather than just particle exposure."

There were many regional differences, for instance there was a decrement of 43g per 10μg/m³ in the north west to no association at all in the south west. $PM_{2.5}$ had no overall association with birthweight.

Influences of study design and location on the relationship between particulate matter air pollution and birthweight, Jennifer Parker et al, *Paediatric and Perinatal Epidemiology*, Vol. 22 pp214-227.

SCIENCE SHORTS

Ozone cuts D

Urban ozone has been found to cut levels of vitamin D in older women.

Belgian researchers studied 250 postmenopausal women. They found that high urban ozone levels led to a lack of vitamin D, essential for bone health and calcium metabolism.

Urban tropospheric ozone increases the prevalence of vitamin D deficiency among Belgian postmenopausal women with outdoor activities during summer, Daniel-Henri Manicourt and Jean-Pierre Devogelaer *Journal of Clinical Endocrinology & Metabolism*, October 2008, Vol .93: pp3893–3899

Tyres to blame

North Carolina researchers have studied tyre particles in a bid to see what causes acute heart impacts.

Researchers suspect that soluble metals (ie immediately bio-available) are to blame and respirable tyre-derived particles were analysed for transition metals including zinc, copper, aluminium and iron. Zinc and copper were detected at high levels in the water soluble fractions.

Rats were instilled with the traffic pollution particles, and the soluble zinc and copper. Only the latter caused marked pulmonary inflammation and injury, with copper effects peaking at four hours and zinc at 24 hours. At high concentrations these metals may induce cardiac oxidative stress, add the researchers.

Cardiopulmonary responses of intra-tracheally instilled tyre particles and constituent metal components, Reddy Gottipolu, *Inhalation Toxicology*, Vol. 20, pp473-484.

Children affected

A re-analysis of the Canadian Hamilton Health Cohort suggests there is a strong link between child respiratory health and air pollution.

Assessing the health impacts of air pollution: a re analysis of the Hamilton children's cohort data using a spatial analytic approach, Theodore Pouliou et al, *International Journal of Environmental Health Research*, Vol. 18, no 1, 2008 pp17-35.

HOT AIR

A few years ago, when air quality responsibilities were taken away from Defra and thrown into the lap of the DfT via local transport plans, *AQB* seemed to be a lone voice expressing fears that this could see significant dilution of enthusiasm for air quality.

We were reassured that by explicitly including air quality as a priority within LTP2 guidance, transport planners would be forced to consider air quality far more than under a reporting system controlled by Defra.

We concede that some authorities have made the LTP system work for them – for instance much of the South Yorks *Care4Air* initiative is paid for with LTP cash. But with the virtual removal of air quality from LTP3 guidance just out (see news, page one), we think that the DfT, and local transport authorities, will revert to type and overlook air quality.

Defra squealed when it first emerged that these air quality responsibilities were to be taken away from it. Has it now lost its voice?

We hear that transport minister Paul Clark has announced a further £10.7m research package into the cause of urban congestion. Actually we could answer that question for free – cars are convenient and cheap, public transport isn't.

We would be more interested to see why politicians are too spineless to dare to challenge people's 'right' to drive where, when and as fast as they like.

That will never happen, so in order to look like progress is being made, the best thing to do is to set up an indicator and hope it goes in the right direction. So hey presto, welcome to the 'journey time indicator for main roads into urban areas'. This is "deemed to have been met if, on target routes in these areas, an average increase in travel of 4.4% is accommodated with an average increase of 3.6% in person journey time per mile". You'll note that previous promises to cut traffic are implicitly ignored.

One welcome outcome of the credit crunch is that people are travelling less – and so there's less congestion. This has meant the indicator has gone in a favourable direction, with the Government taking the credit.

This has an uncanny resemblance to the nonsense of the air quality indicator where random cool weather leads to 'good' clean years, and hot years lead to poor air quality performance for the indicators. At the end of the year the Government then takes the credit if the indicator goes in the right direction, or blames the weather if it goes in the opposite direction.

With hot summers forecast, we can expect an increase in hot air (bad weather) and hot air (greenwash).

The timing is great – environment minister Lord Hunt has announced updating of the Defra's *Green claims' code*. It seems the code needs revising to support businesses and ensure the broad range of environmental claims they make are accurate, truthful and relevant.

We think it should apply to the Government itself to make sure its green claims are accurate, truthful and relevant.

So the biomass lobby reckons environ mental health officers have wasted £4.5m being cautious on biomass?

They should visit www.pscleanair.org which is an excellent website dedicated to explaining to Puget Sound residents whether or not they can use their wood fired boilers or not – in wintertime, 80% of smog is from wood stoves. If the air is bad, a ban is put in place unless the stove is a clean burner.

Sounds very sensible, but you do have an idea what the appliances emit – biomass industry take note.

AIR QUALITY EVENTS 2009

11th March

Energy from Waste and Biomass

organised by IOM3 (Organised by the Institute of Materials, Minerals and Mining) and to be held in London, www.iom3.org/events/waste

20th March ****date change by organiser****

Indicators: where next?

UWE/Epuk south western division conference to be held in Bristol. Contact David Muir david_muir@bristol.gov.uk

24th-27th March

7th International Conference on Air Quality

Science and Application (Air Quality 2009) (formerly known as the Urban Air Quality Conference) to be held in Istanbul. For more information, visit the website www.airqualityconference.org

2nd-3rd April

Air Quality Spring Workshop

Epuk air quality spring workshop to be held in Highgate House, Northampton. www.environmental-protection.org.uk
Carry Keay 01273 878776

20th-21st April

2009 Indoor and Outdoor Air Pollution Research

Meeting to be held at Cranfield, www.le.ac.uk/ieh

24th April

LAQN Seminar

London Air Quality Network Seminar to be held in London, www.londonair.org.uk

29th-30th April

MCERTS 2009

MCERTS conference, exhibition and workshops, air & emission monitoring. A specialist conference, exhibition and workshops for Air Monitoring to be held at Bretby. website www.mcerts.uk.com

19th-20th May

Ultrafine Particles – Sources, Effects, Risks and

Mitigation Strategies, European Federation of Clean Air and Environmental Protection Associations conference to he held in Brussels, http://efca.net

23rd-25th June

12th conference on combustion generated nanoparticles

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

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