

Proceedings of the Fourth Air Pollution Forecasting Seminar  
Wednesday 27<sup>th</sup> April 2005  
Met Office, Exeter

The Fourth Air Pollution Forecasting Seminar was hosted by the Met Office on behalf of the Department for the Environment, Food and Rural Affairs (**defra**) and the Devolved Administrations on Wednesday 27<sup>th</sup> April 2005 at the Met Office in Exeter.

The seminar was one of an ongoing series of events, hosted by the Met Office and **netcen** to report on improvements to the air-quality forecasting service commissioned by **defra** and the Devolved Administrations.

The air-quality forecasting service has a number of aims:

- To issue timely air quality forecast information to government departments, local authorities, media groups, health services and the general public.
- To give prior notice to groups sensitive to high levels of pollution so that they can take action to reduce any risk.
- To encourage members of the public to be more environmentally friendly, particularly during periods of poor air quality.
- To provide advance warning of the length and severity of pollution episodes to the Government and health services.

The information is made as widely accessible as possible through national media weather bulletins as well as:

- The Air Pollution Bulletin Service on freephone 0800 556677
- The Air Quality Archive on "[www.airquality.co.uk](http://www.airquality.co.uk)"
- Ceefax page 417
- Teletext 156

More than 50 delegates and speakers attended the event. These included delegates from medical and health organisations, local authorities, scientific officers, environmental health and pollution control academics, consultants, representatives from **defra** and the devolved administrations and the Environment Agency.

The seminar provided a forum for organisations to present their latest research and to highlight any services which they provide in the field of air quality forecasting, air monitoring and modelling technology and health issues relating to air pollution. These presentations provoked much useful and informative discussion.

**In particular, the following topics were aired during the question and answer sessions:**

The success and accuracy rates of the national air pollution forecasts were discussed. Whilst there were some difficulties understanding the definitions of these measures, 2004 was reported by netcen to have been typical in terms of the success and accuracy rates achieved for zones (predominantly ozone pollution in rural areas), but low for agglomerations (urban areas) due to the relatively high incidence of localised and difficult to forecast PM<sub>10</sub> episodes during this year.

Discussion of the factors affecting the accuracy of the air quality forecasts was wide-ranging and covered:

- Weather forecasts.
- Local pollution sources.
- Unusual trans-boundary PM<sub>10</sub> events (Saharan dust, forest fires, volcanic eruptions etc.)
- Emissions inventories.

It was reported that the UK is the only European country currently publishing the success rates of air pollution forecasting, based on "actual" reported data and forecast meteorology. By taking out unusual events and using analysis met. data it is possible to improve the reported performance of forecasting models.

It was reported that there are several joint European initiatives to improve and co-ordinate air quality forecasts. These currently involve netcen, the Met Office and Defra:

- Smog Warners co-ordinated by netcen since 1997 – see [www.aeat.com/netcen/airqual/forecast/smogwarners](http://www.aeat.com/netcen/airqual/forecast/smogwarners)
- Ozone Web operated as part of the EC's Clean Air for Europe (CAFE) programme- see [http://ozone.eionet.eu.int/index.jsv?pk\\_lang=20](http://ozone.eionet.eu.int/index.jsv?pk_lang=20)
- A proposal from the Network of European Meteorological Services (EUMETNET) see [www.eumetnet.eu.org](http://www.eumetnet.eu.org)

The effects of air pollution on hospital admission and mortality rates encouraged much discussion and re-enforced the importance of research in this area. The Department of Health now has a unique database which contains details of all the research comparing hospital admission and mortality rates with background air pollution. It was reported that patients with some conditions were put at much higher risk of premature death with increased air pollution. Statistically significant factors relating air pollution to hospital admission rates and mortality rates can be confirmed for all major pollutants. The only poor relationship was between increasing ozone and hospital admissions, and this was not fully understood.

Published research into the numbers of increased deaths per ppb or  $\mu\text{g m}^{-3}$  of pollution gives us a guide to the scale of the risks and confirms the value of this area of work.

The Met Office Health Forecasting team are trying to encourage the NHS to take preventative action to protect susceptible patients when conditions are likely to adversely affect their health.

The latest evidence on the links between climate change and air pollution levels were presented and discussed. This is a complex area with many conflicting factors, and there was no simple answer as to whether climate change would make air pollution levels worse in the future. Indeed, emissions of some pollutants are expected to offset the effects of global warming by causing "global dimming".

### **Other Information:**

The full agenda for the day's proceedings is listed below along with details of other websites and papers relating to the topics discussed.

Copies of the presentations from the seminar are provided on the Research Information section of the Air Quality Archive ([www.airquality.co.uk](http://www.airquality.co.uk)) in pdf format. For further information on the air quality forecasting service please contact [paul.willis@aeat.co.uk](mailto:paul.willis@aeat.co.uk).

### **For further information please see:**

Defra

<http://www.defra.gov.uk/environment/airquality/index.htm>

The Air Quality Archive

[www.airquality.co.uk](http://www.airquality.co.uk)

Air Quality Forecasting

[http://www.airquality.co.uk/archive/uk\\_forecasting/apfuk\\_home.php](http://www.airquality.co.uk/archive/uk_forecasting/apfuk_home.php)

Air Quality Forecasting Reports

[http://www.airquality.co.uk/archive/reports/reports.php?action=category&section\\_id=12](http://www.airquality.co.uk/archive/reports/reports.php?action=category&section_id=12)

Department of Health

<http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/AirPollution/fs/en>

BBC Weather

<http://www.bbc.co.uk/weather/ukweather/>

Forecasting the Nations Health

<http://www.met-office.gov.uk/health/nationhealth.html>

The Hadley Centre

<http://www.meto.gov.uk/research/hadleycentre/>

AOEG

<http://www.defra.gov.uk/environment/airquality/aeat/index.htm>

**Air Pollution Forecasting Seminar:  
Air Quality, Health and Climate Change**

**Wednesday 27<sup>th</sup> April 2005  
Met Office, Exeter**

<b>Proposed Timetable</b>	
10:00 - 10:30	Coffee & Registration
10:30 - 10:45	Welcome and Introduction from Met Office/Defra
10:45 - 11:15	Air Quality Policy Overview Noel Nelson, Defra
11:15 - 11:45	UK Air Quality Forecasting - Project Update Paul Willis, AEAT netcen
11:45 - 12:15	Recent AQ & Health Research Dr Bob Maynard, Department of Health
12:15 - 12:30	Discussion
<b>12:30 - 13:30</b>	<b>Lunch</b>
13:30 - 14:00	Presenting Environmental Information John Hammond, BBC Weather Centre
14:00 - 14:30	Practicalities of using a health forecast Mark Gibbs, Met Office
<b>14:30 - 15:00</b>	<b>Tea</b>
15:00 - 15:30	Climate Change & Air Quality Dr Bill Collins, Met Office
15:30 - 16:00	AQEG 3 <sup>rd</sup> report - progress update and latest findings Professor Mike Pilling, Leeds University (AQEG Chair)
16:00 - 16:30	Discussion & Close