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Defra Air Quality Update

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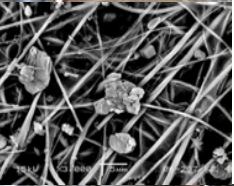
Latest developments

- Europe:
 - New Directive on ambient air quality
 - Monitoring Network reorganisation
 - National:
 - Indicators
 - Air Quality Expert Group
 - Local:
 - Air quality performance indicator
 - Local air quality management
 - Air quality grant
- Air Quality Information Archive



Europe

- New directive on ambient air quality
 - Adopted on 14 April 08 by European Council
 - <http://register.consilium.europa.eu/pdf/en/07/st03/st03696.en07.pdf>
 - Due to be published May 08
 - Extended compliance deadlines for EU limit values
 - UK likely to need to apply for extended compliance deadlines for both PM₁₀ and NO₂, subject to full public consultation
 - Regulation of PM_{2.5}
 - Implementation date – likely May 2010



Europe: New AQ Directive

Limit values **apply** everywhere

Indications of where limit values must be **assessed**

- Not in any locations within areas where members of the public do not have access and there is no fixed habitation
- Not on the carriageway of roads or on central reservations except where normally pedestrian access to central reservation

Macro & micro-scale siting criteria also apply to modelling



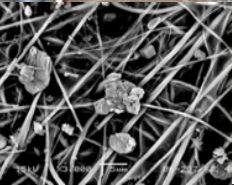
Europe: New AQ Directive



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PM_{2.5}:

- new target value = 25 $\mu\text{g m}^{-3}$; from 1 January 2010;
- new limit value = 25 $\mu\text{g m}^{-3}$; 1 January 2015 onwards
- Stage 2 limit value = 20 $\mu\text{g m}^{-3}$; from 1 January 2020
- Can subtract natural sources contributing to exceedences



Europe: New AQ Directive

PM_{2.5}:

- non-mandatory **Exposure Reduction Target** at urban background on a sliding scale (0-20%) dependent on initial concentration in 2010 concentrations by 2020
- New **Exposure Concentration Obligation** - 20 $\mu\text{g m}^{-3}$ from 1 January 2015 onwards
- UK likely to require 15% reduction
- Reference concentrations – 3 year average of 2008-2010 & 2018-2020
- Urban background monitoring where > 100,000 population
- Monitoring in place from 1 January 2008 or **2009**



Europe: Monitoring New AQ Directive proposal

Other pollutants:

- 0.5-2:1 ratio of urban background to traffic sites (NO_2 , PM, CO, benzene)
- 0.5-2:1 ratio of PM_{10} to $\text{PM}_{2.5}$
- Requirement to monitor SO_4 , NO_3 , Na, K, NH_4 , Ca, Cl, Mg, EC/OC at rural background



Europe: Monitoring UK Context – new Network



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Pollutant	Current No. of sites (traffic)	Min Required by new Directive (traffic)	Revised Automatic Urban and Rural Network (traffic)
PM₁₀	70 (64 TEOM; 7 Grav; 11 traffic)	115 (min 47 PM _{2.5} ; min 39 traffic; min 39 PM ₁₀)	65 (24)
PM_{2.5}	4 (1)		77 (22)
NO₂	96 (23)	83 (27)	120 (36)
CO	79 (10)	6 (2)	26 (5)
SO₂	76	28	45
Benzene	39 (10)	39 (13)	41 (16)



New sites

Affiliated to the AURN since 1 October 07:

- Horley (NO₂)
- Stewartby (SO₂)
- Carlisle Roadside
- Chepstow A48
- Newcastle Cradlewell Kerbside
- Leeds Headingley Kerbside
- Liverpool Queens Drive (imminent)
- Stanford-le-Hope Roadside
- Oxford St Ebbes
- Chesterfield
- Chesterfield Roadside
- York Bootham
- York Fishergate
- Aberdeen Union St

Still searching for sites in the following zones:

- South-east (roadside)
- Eastern (roadside)
- East Midlands (roadside NO₂)
- North-west & Merseyside (roadside, NO₂; Background NO₂, PM)
- West Midlands (roadside NO₂, PM)

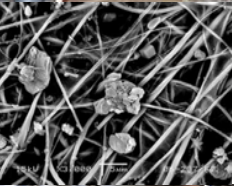


Europe: Monitoring UK Implementation of PM requirements



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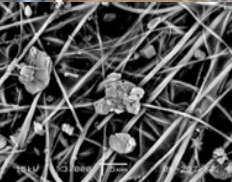
Europe: Monitoring 4th Daughter Directive



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- PAHs, arsenic, cadmium, mercury, nickel
- target values for PAHs (as B[a]P 1 ng/m³), Arsenic (6 ng/m³), Cadmium (5 ng/m³), and Nickel (20 ng/m³)
- PAHs - replaced all 19 of the current samplers with the PM₁₀ reference method (Digitel HiVols) and requires 14 new sites
- Heavy metals - 17 current sites – relocating some existing sites and require 11 new sites
- Many of new sites are co-located PAH and heavy metals
- Deposition monitoring – heavy metals and PAH at Auchencorth Moss and Harwell



PAH network



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Old sites continuing

- Birmingham
- Bolsover
- Brent
- Bromley
- Cardiff 2
- Edinburgh
- Glasgow
- Hove
- Kinlochleven
- Leeds 2
- Lisburn
- Newcastle
- Newport (StJulian's)
- Port Talbot
- Scunthorpe
- Liverpool Speke
- High Muffles
- Hazelrigg
- Stoke Ferry

New sites

- Auchencorth Moss Site
- Ballymena Site
- Derry Site
- Glasgow Site
- Harwell Site
- London Marylebone Rd
- Lynemouth (Alcan Lynemouth downwind)
- Manchester
- Middlesbrough
- Newport/Rhondda
- Port Talbot upwind
- South Hiendley (Monckton downwind)
- Royston (Monckton upwind)
- Santon (Corus Scunthorpe downwind)



Heavy Metals Network



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• **Sites closed:**

- Leeds
- Glasgow
- Newcastle
- Brent

• **New sites Opened to date:**

- Murrinston - INCO upwind
- Coedgwilym Cemetery – INCO downwind
- Belfast Centre
- Port Talbot AURN
- Sheffield Centre
- Scunthorpe Town – Corus upwind
- Santon – Corus downwind

• **Sites Planned:**

- Redcar ex-AURN - Corus downwind
- Nunthorpe - Corus upwind – investigating site locations
- Cardiff Rumney - CELSA steel works downwind;
- Chadwell St Mary - Britannia Metals downwind
- Bean Primary School - Britannia Metals upwind



UK: Sustainable Development Indicators

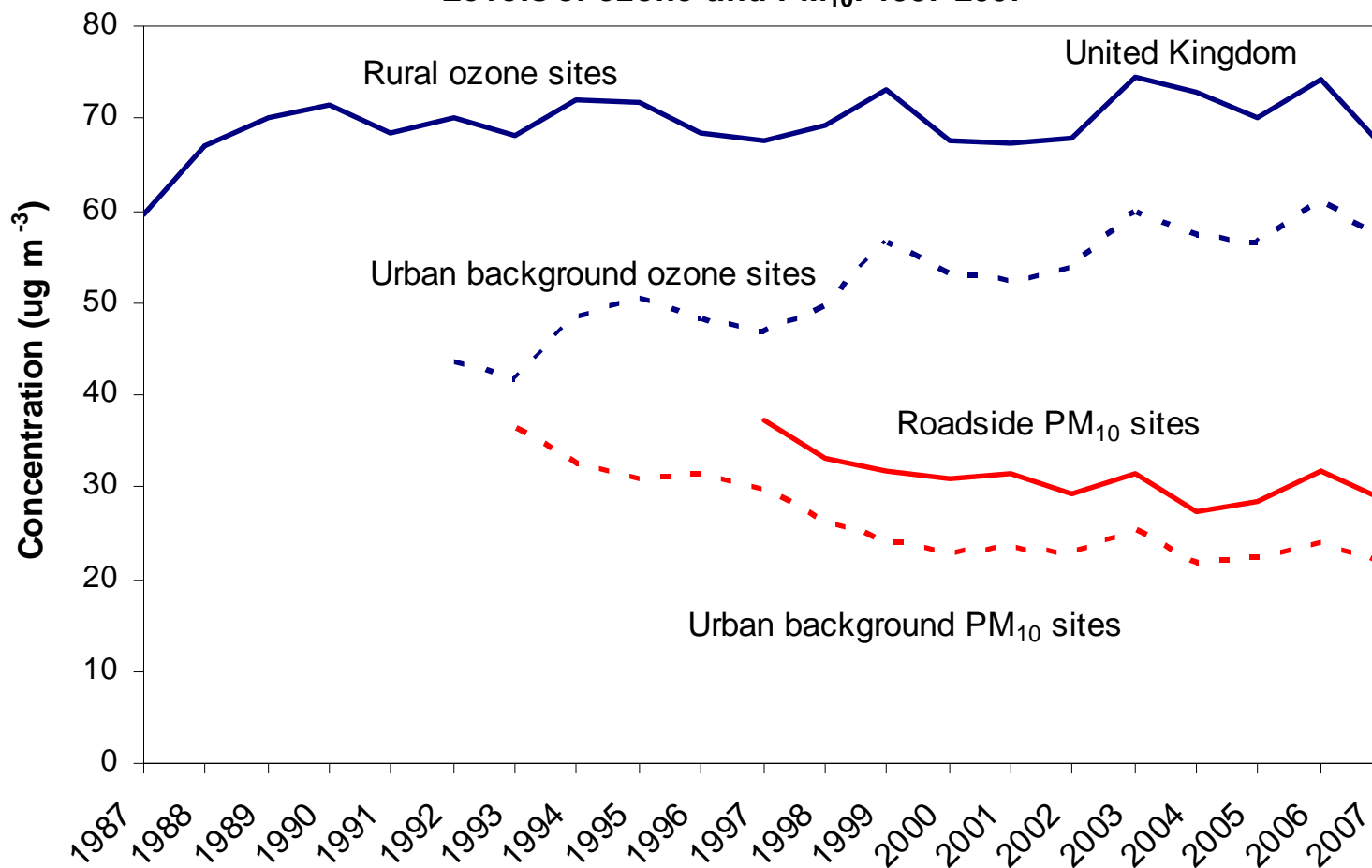


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Levels of ozone and PM₁₀: 1987-2007



Source: AEA, Defra

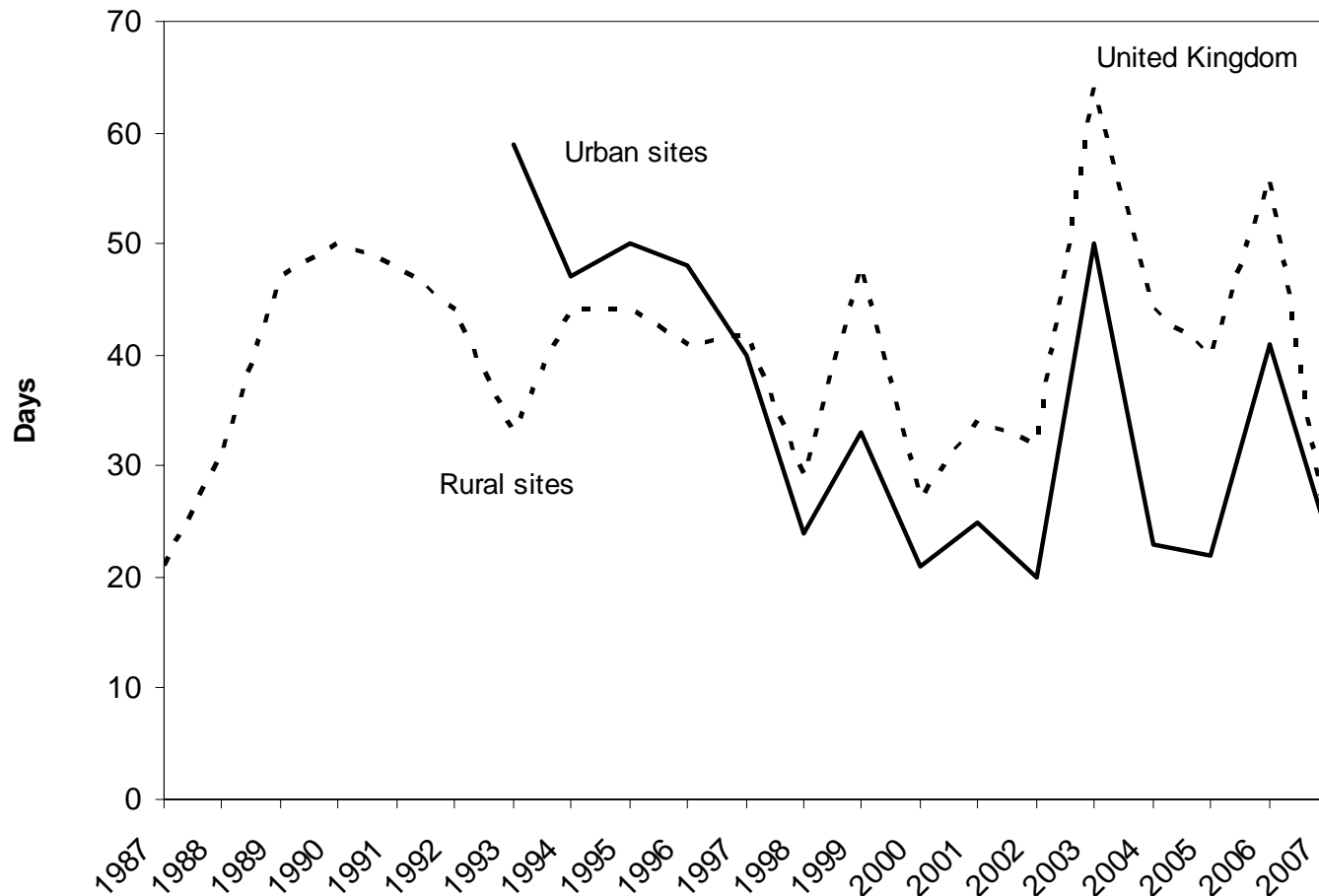
UK: Sustainable Development Indicators



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Days when air pollution is moderate or higher: 1987-2007



Source: AEA, Defra

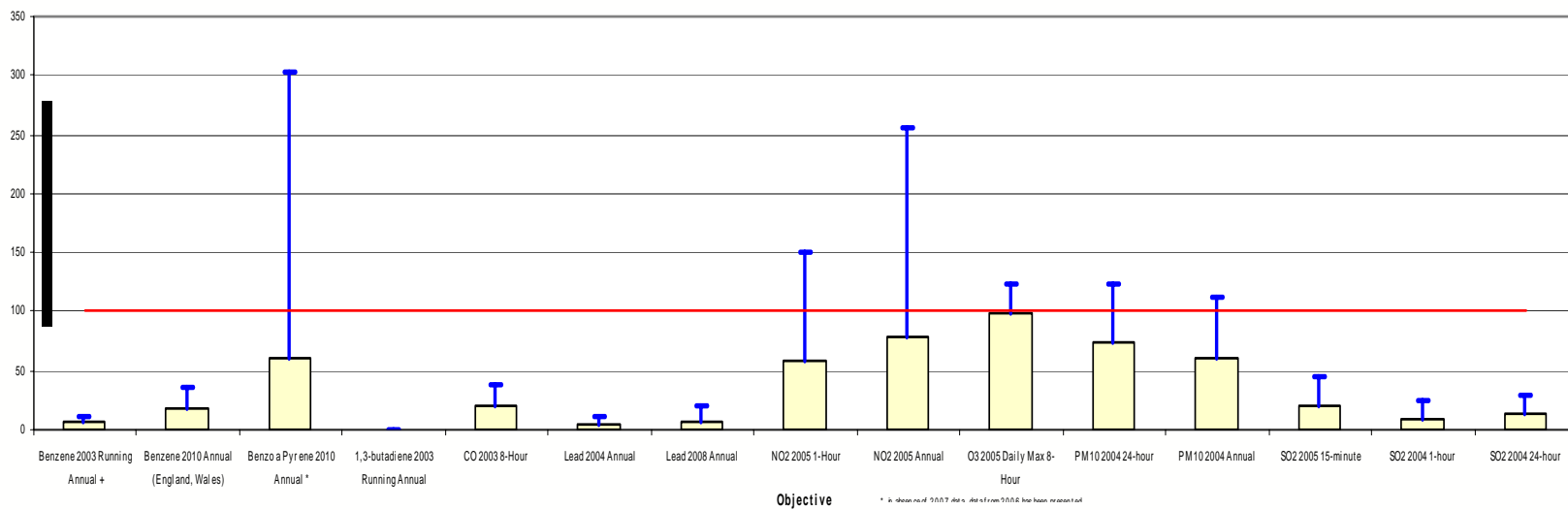


UK: Progress with Objectives – (England only)



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Air Quality Expert Group



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Primary NO₂ report

- Publication – earlier in 2008
- www.defra.gov.uk/environment/airquality/panels/aqeg/

AQEG

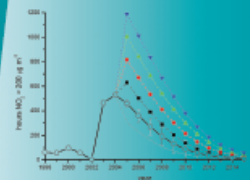
- Under review

AIR QUALITY EXPERT GROUP

Trends in Primary Nitrogen Dioxide in the UK



Published for:
Department for Environment, Food and Rural Affairs;
Scottish Executive; Welsh Assembly Government; and
Department of the Environment in Northern Ireland



Local: Performance Indicator



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Air quality performance indicator

- New Performance Framework published on 11 October 07-
www.communities.gov.uk/publications/localgovernment/nationalindicator
- Each local authority to report against a set of 198 indicators
- Local Area Agreements
- **NI 194 - Level of air quality** – reduction in NO_x and PM₁₀ emissions through local authority's estate and operations
- Emissions tool – Excel spreadsheet
- Calculates emissions of CO₂, NO_x and PM₁₀
- Emissions tool available via
www.defra.gov.uk/environment/airquality/index.htm
- Should be pulling together the data required now – don't leave it until early 2009!



Local: Local Air Quality Management (LAQM)



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- LAQM guidance under revision before 4th round of review and assessment
- Policy and Technical Guidance updates
 - Consultation – next month
 - Final version available late 2008
 - Web-based reporting for USAs and Progress Reports
- Evaluations of last round of LAQM process and support available at www.defra.gov.uk/environment/airquality/local/eval/index.htm



Contents of Technical Guidance

- Source based rather than by pollutant
- PM₁₀/PM_{2.5}; KCL VCM (+ web tool);
- Difficult modelling;
- NO_x:NO₂; primary NO₂;
- Vehicle emission factors;
- Updated background maps split by source;
- biomass;
- exposure reduction;
- congestion; non-exhaust emissions; shipping; rail; near kerbside and height adjustments; nomograms



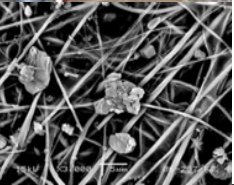
Contents of Technical Guidance



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- Measures –
 - LEZs; road user charging; LEVs; retrofits
- Definitions;
- Worked Examples
- Legal basis
- Assessing schemes
 - AQ assessment
 - Benefits
 - Costs
 - Cost-effectiveness/cost benefit
 - Potential wider effects of schemes





Local: LAQM



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Support provided to authorities

Review and assessment appraisal	Updating and Screening Assessment; Detailed Assessment; Progress Reports	Tel: 0117 328 3668 Email: aqm-review@uwe.ac.uk Website: www.uwe.ac.uk/aqm/review
Action Plan appraisal	Action Plans	Tel: 0870 190 6050 Email: lasupport@aeat.co.uk Website: www.airquality.co.uk/archive/actionplan.php
LAQM support	Monitoring, modelling and emissions	Tel: 0870 190 6050 Email: lasupport@aeat.co.uk Website: www.laqmsupport.org.uk
Defra support	Guidance and FAQs	www.defra.gov.uk/environment/airquality/local/index.htm

Local: AQ grant

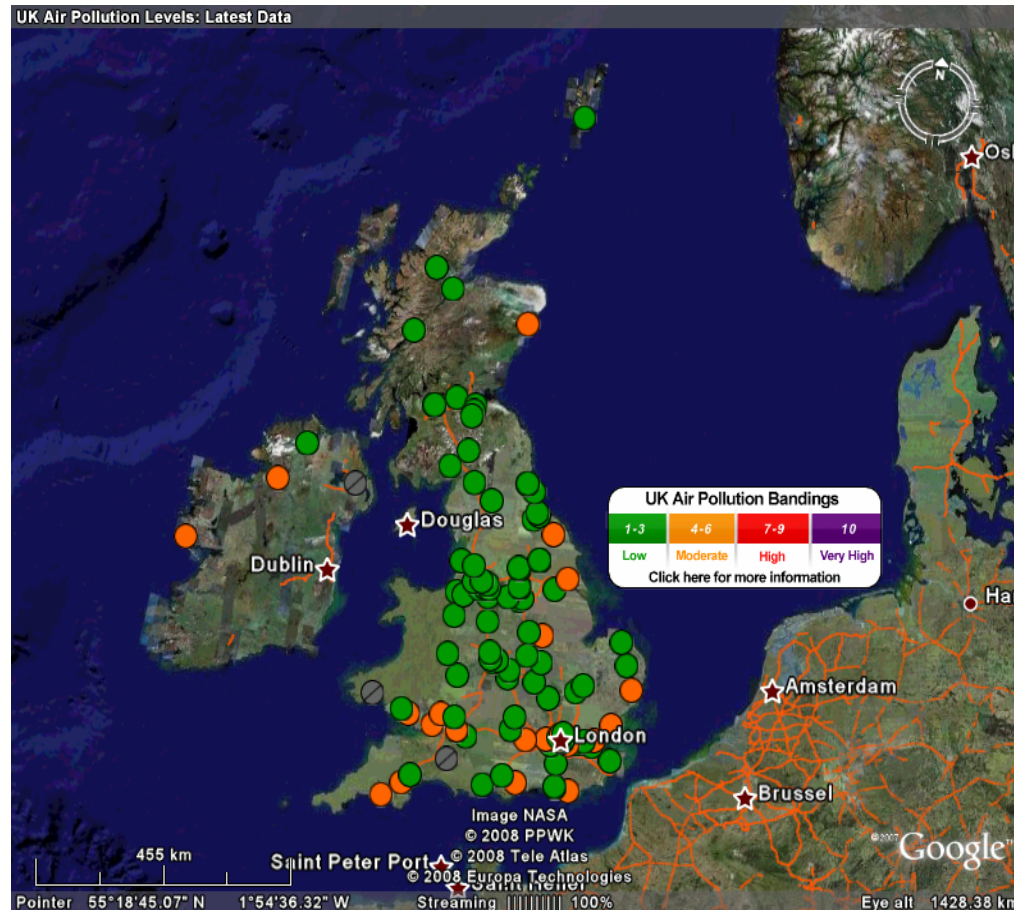
- Local authorities invited to submit grant applications
 - Allocation of £2.36m
 - Bids of £8.3m
- Bids currently being assessed against priority criteria
- Any grant offered does not have to be spent in the current financial year



Air Quality Information Archive changes



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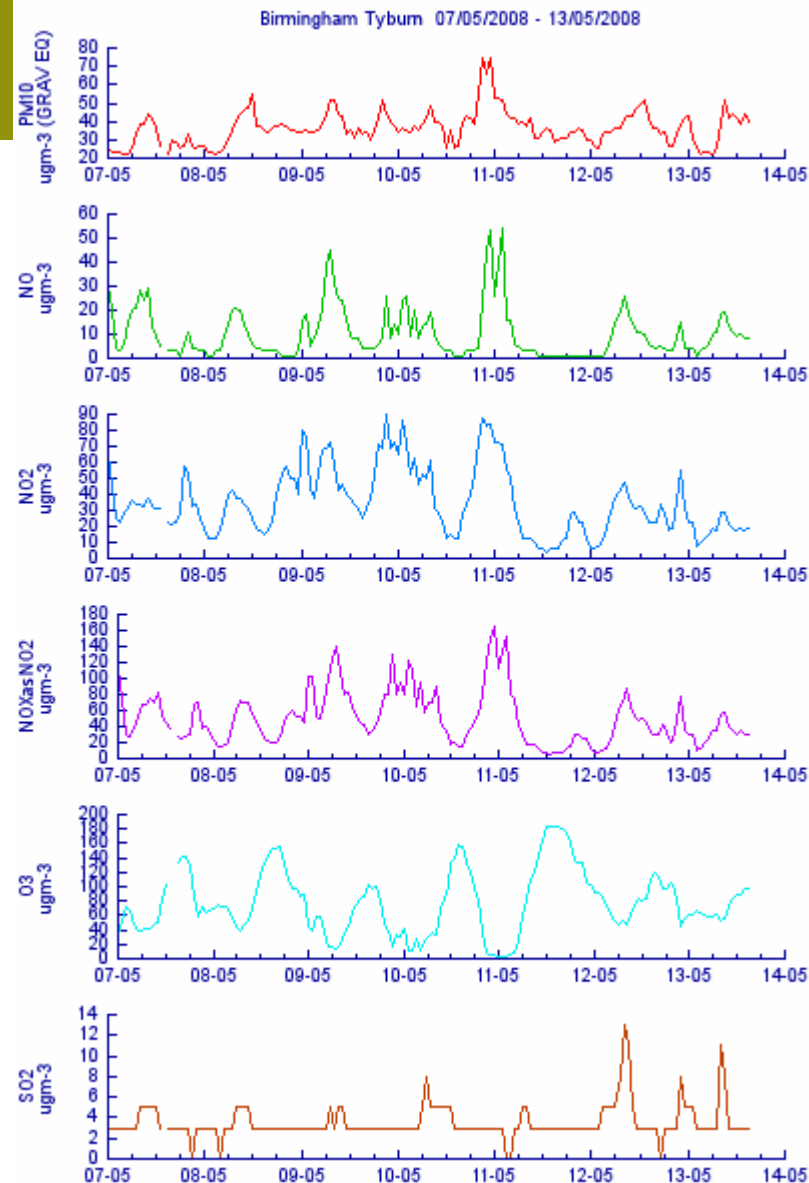


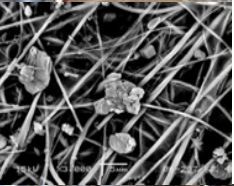
- Latest air quality data available mapped onto Google

Air Quality Information Archive changes



- New weekly graphs available through current hour and 24hr summary bulletins



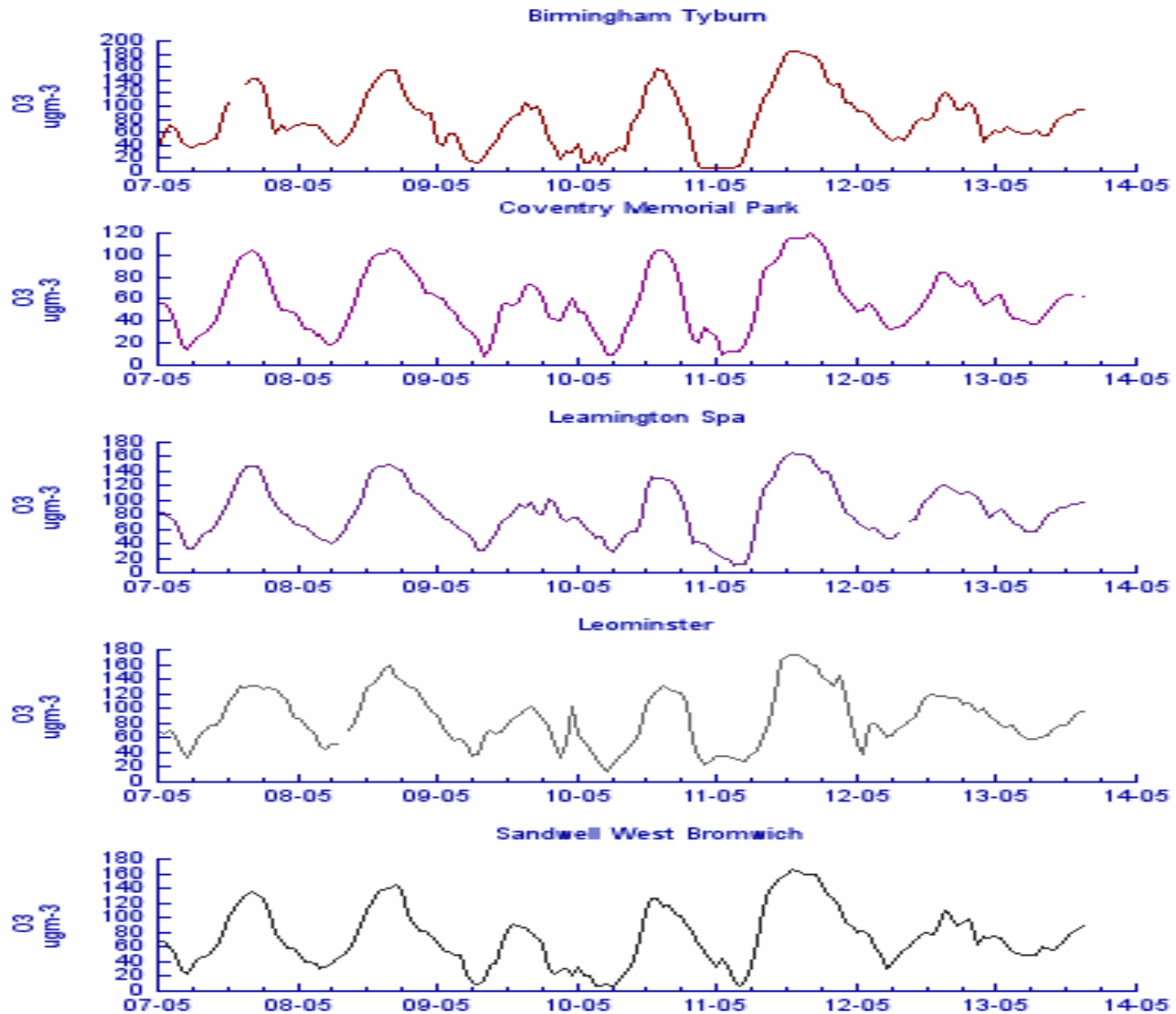


weekly O3 plots - Microsoft Internet Explorer provided by Defra

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Address http://www.airquality.co.uk/archive/period_plots.php?POL=O3&period=weekly





- Thank you for your attention
- Any questions?

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