

Air Quality Update

Sean O'Byrne

Local Air Quality Management

Defra

Sean.o'byrne@defra.gsi.gov.uk

Air Quality Update



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1. National Air Quality Priorities

1. PM₁₀ and NO₂ Time Extensions
2. Measures and LEZs

2. Local Air Quality Management

1. Delivery
2. Communications

3. National and European Updates

1. Natural Environment White Paper
2. [Monitoring Review]
3. Commission Review of Air Quality Directives

PM₁₀, NO₂ Time Extensions



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PM₁₀

- Time extension given until June 2011
- Air Quality Plan for London updated to reflect short term measures
- Additional funding to TfL to support extension of local measures

NO₂

- Consultation 9 June - 5 August
- About fifth of roads in major urban areas exceed the limit value
- Plans set out national, regional and local measures

Measures already planned



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Local Sustainable Transport Fund

- £500 million
- Reducing carbon promoting growth
- Air quality measures treated favourably

National Measures

- Reduced Pollution Certificate for HGV Euro VI from Jan 2012 for 5 years
- Support for ultra low emission vehicles through 'plugged in places' and electric vehicle grant

Investigating Low Emission Zones 1



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Considering measures to promote LEZs outside London

- Measures targeted on improving HGVs and Buses most effective
- Aimed at zones where it helps to achieve compliance or significantly reduce compliance gap by 2015

Uncertainties

- What NO_x reductions can be achieved?
- What are enforcement and administration implications
- What is local authority appetite or interest

Investigating Low Emission Zones 2



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Research and workshop into feasibility of national framework

- Emission standards, technology and reductions available
- Administration and certification
- Market capacity and fitting
- Enforcement considerations
- Costs to Government, local authorities and operators

Next steps

- Consider evidence gathered from workshop
- Identify any remaining evidence gaps
- Put forward options to ministers

Local air quality management review



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Context

- current system good at diagnosis but less so on delivery of solutions
- Local authorities key to delivery of air quality on the ground

Policy

- Significant challenge to meet limit values – esp. NO_2 but also for $\text{PM}_{2.5}$ in the future
- alignment of national and local priorities
- continued health and environmental impacts
- Local authorities want clarity on what is expected of them to improve air quality
- how do we maintain accountability for air quality

Need right framework for

- LAs to deliver improvements and to support progress to EU obligations
- Provide flexibility to respond to local circumstances

Focus on delivery



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Current reporting cycle heavy and prescriptive
Emphasis more on diagnosis rather than improving air quality.
Several years before action plans might be developed or implemented

Proportionate screening and reporting
Greater flexibility, combined reporting, joint action plans etc
Align action to improve air quality with meeting EU limits
Sharing best practice on what works where

Monitoring and Assessment Review



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- ▶ All Member States must undertake air quality assessment and report the findings to the European Commission on an annual basis.
- ▶ The Directives:
 - ▷ The Council Directive on Ambient Air Quality and Cleaner Air for Europe (2008/50/EC) : NO₂, PM₁₀, PM_{2.5}, SO₂, CO, Pb, O₃ and Benzene.
 - ▷ The 4th Daughter Directive (2004/107/EC): PAHs, Cd, As, Ni and Hg.
- ▶ The UK has statutory monitoring networks in place to meet the requirements of these Directives.
- ▶ The monitoring and assessment must be reviewed every 5 years with a review taking place this year, 2011 for the AQ Directive.

AQ Monitoring Review 2011



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- ▶ Pollutants covered by the Ambient AQ Directive (AQD) – 2008/50/EC.
- ▶ Review will be conducted in accordance with methodology in Articles 5, 6 and 7 of the AQD.
- ▶ Step 1: For each zone, review 5 years' assessment data to determine how many monitoring stations are needed, taking into account supplementary modelling.
- ▶ Step 2: Review existing network to check for compliance and identify any changes needed. Any new sites required to be implemented in accordance with Annex III of AQD, macro and microscale siting criteria.
- ▶ Step 3: Aim to implement changes end of 2011/12 to establish monitoring for next 5 years.



The EU review of air quality legislation launched in 2011 and will conclude in 2013



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- ▶ Commission working paper now published;
- ▶ Aims to update existing policies and directives (ambient air quality and emission ceilings);
- ▶ Commission to launch consultation in 2011;
- ▶ Commission stakeholder meeting in June;
- ▶ http://ec.europa.eu/environment/air/index_en.htm

European Commission review of air quality legislation



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- European Commission aims to update its 2005 Thematic Strategy which sets health and environmental objectives for 2020;
- European Commission conducting public consultation later this year;
- Clean air strategy package to be adopted by 2013, including proposals to revise the Air Quality and Emission Ceilings Directives;
- BUT many Member States still face challenges to meet existing air quality and emission legislation;

The UK welcomes the review:

- It should deliver objectives on public health and the environment which are also consistent with those on economic development;
- It must be evidence based and result in targets which enables resources to be focused on actions to reduce air pollution and meet other environmental objectives such as carbon reduction in a coherent way;
- Principles of better regulation must be applied.

Summary



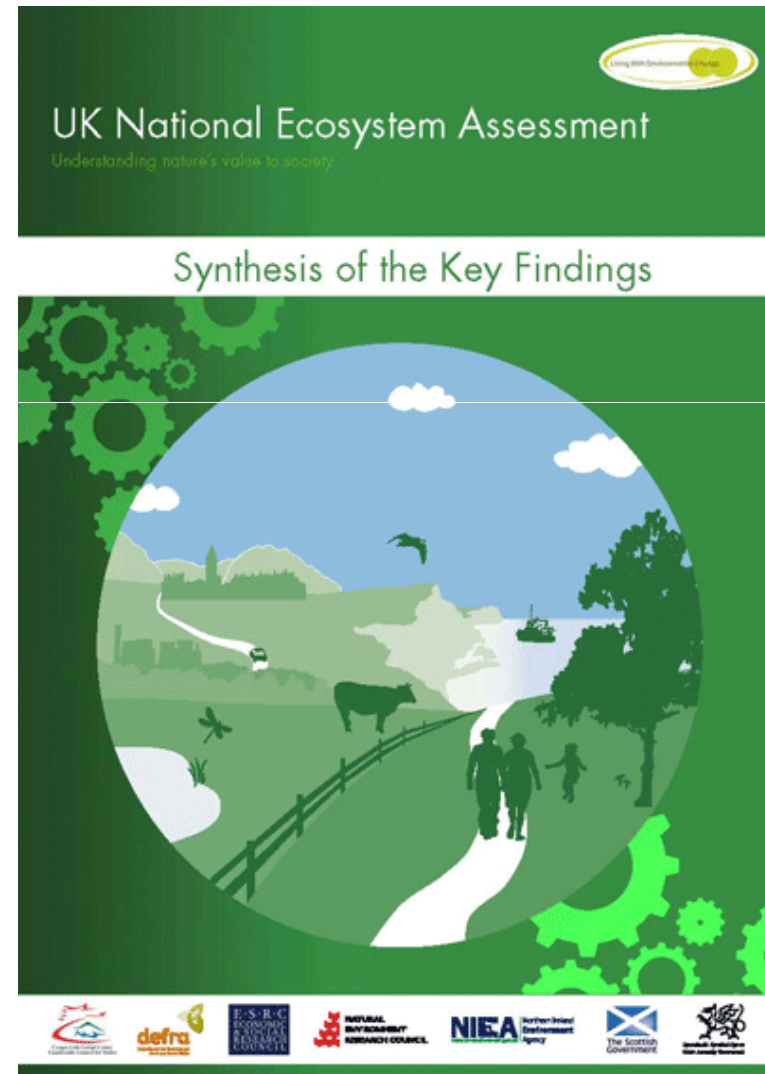
- ▶ PM10 extension until June 2011 for London on condition that air quality plan is updated to include short term measures post June
- ▶ NO2 must submit application by September 2011
- ▶ Significant number of measures already planned especially around carbon reduction, investigating further action including low emission zones
- ▶ Report on NOx trends highlights uncertainties and difficulty of identifying reliable solutions.
- ▶ Local Air Quality Management Review will align national and local action and move focus onto communications and delivery of air quality improvements
- ▶ Air Quality Grant to be targeted on action planning
- ▶ EU review of air quality legislation launched

UK National Ecosystem Assessment



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- ▶ Highlights need to better manage ecosystems and natural resources they provide
- ▶ Recommends we take account of full value of ecosystems services
- ▶ Defra funded research to provide methodology for applying this to air pollutants



Natural Environment White Paper



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- ▶ Published 6 June
- ▶ Highlights need to secure value of nature and services it provides
- ▶ Commitments on air quality
 - ▷ Consult on NO₂ plans
 - ▷ Investigate potential of LEZs
 - ▷ Consult on changes to LAQM

MACC (Marginal Abatement Cost Curve)

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- MACC tool is an Excel spreadsheet which shows the cost of reducing NO_x by one tonne across a range of technologies
- The tool also shows the effects of implementing these technologies on exceedences of the EU limit value (40µgm⁻³)

The 'economic MACC' final



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Measure	MAC 2015 (£ / t)	Emission Savings 2015 (tNO _x)
24-RT-Petrol cars-Euro VI 1.4-2.0l-Downsize 1.4-2l to under 1.4l	-£7,859,866	40
22-RT-Petrol cars-Euro VI >2.0l-Downsize 2l to 1.4-2l	-£6,191,078	25
37-RT-Diesel cars-Euro V-Electric	£715	75
2-RT-HGV-Euro II-SCR	£1,790	155
3-RT-HGV-Euro III-SCR	£2,568	2,353
6-RT-Buses-Euro I-SCR	£4,058	37
7-RT-Buses-Euro II-SCR	£4,764	499
8-RT-Buses-Euro III-SCR	£5,608	1,978
4-RT-HGV-Euro IV-SCR	£6,287	1,525
9-RT-Buses-Euro IV-SCR	£9,842	1,049
16-RT-Articulated HGV-Euro V-Euro VI	£12,132	5,225
11-RT-Buses-Euro I-Hybrid	£15,917	21

The measures considered



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- The model considers a list of 93 measures – these can be split into three groups

- 1 RT HGV Euro I to SCR
- 2 RT HGV Euro II to SCR
- 3 RT HGV Euro III to SCR
- 4 RT HGV Euro IV to SCR
- 5 RT Buses Pre-Euro to SCR
- 6 RT Buses Euro I to SCR
- 7 RT Buses Euro II to SCR
- 8 RT Buses Euro III to SCR
- 9 RT Buses Euro IV to SCR
- 10 RT Buses pre-Euro to Hybrid
- 11 RT Buses Euro I to Hybrid
- 12 RT Buses Euro II to Hybrid
- 13 RT Buses Euro III to Hybrid
- 14 RT Buses Euro IV to Hybrid
- 15 RT Rigid HGV Euro V to Euro 6
- 16 RT Articulated HGV Euro V to Euro 6
- 17 RT Buses New Euro V to Euro 6
- 18 RT Buses pre-Euro 1 to Hydrogen
- 19 RT Buses Euro 1 to Hydrogen
- 20 RT Buses Euro 2 to Hydrogen
- 21 RT Buses Euro 3 to Hydrogen
- 22 RT Buses Euro 4 to Hydrogen
- 23 RT Buses Euro 5 to Hydrogen
- 24 RT Buses Euro 6 to Hydrogen
- 25 RT Buses pre-Euro 1 to Electric
- 26 RT Buses Euro 1 to Electric
- 27 RT Buses Euro 2 to Electric
- 28 RT Buses Euro 3 to Electric
- 29 RT Buses Euro 4 to Electric
- 30 RT Buses Euro 5 to Electric
- 31 RT Buses Euro 6 to Electric
- 32 RT HGV, to Modal Shift
- 33 RT Diesel LGV - class 1 Euro 5 class I to Euro 6
- 34 RT Diesel LGV - class 2 Euro 5 class II to Euro 6
- 35 RT Diesel LGV - class 3 Euro 5 class III to Euro 6
- 36 RT Petrol cars Euro 5 >2.0l to Downsize 2l to 1.4-2l
- 37 RT Petrol cars Euro 6 >2.0l to Downsize 2l to 1.4-2l
- 38 RT Petrol cars Euro 5 1.4-2.0l to Downsize 1.4-2l to under 1.4l
- 39 RT Petrol cars Euro 6 1.4-2.0l to Downsize 1.4-2l to under 1.4l
- 40 RT Petrol cars pre-Euro 1 to Electric
- 41 RT Petrol cars Euro 1 to Electric
- 42 RT Petrol cars Euro 2 to Electric
- 43 RT Petrol cars Euro 3 to Electric
- 44 RT Petrol cars Euro 4 to Electric
- 45 RT Petrol cars Euro 5 to Electric
- 46 RT Petrol cars Euro 6 to Electric
- 47 RT Diesel cars pre-Euro 1 to Electric
- 48 RT Diesel cars Euro 1 to Electric
- 49 RT Diesel cars Euro 2 to Electric
- 50 RT Diesel cars Euro 3 to Electric
- 51 RT Diesel cars Euro 4 to Electric
- 52 RT Diesel cars Euro 5 to Electric
- 53 RT Diesel cars Euro 6 to Electric
- 54 RT Diesel Hire pre-Euro 1 to Electric
- 55 RT Diesel Hire Euro 1 to Electric
- 56 RT Diesel Hire Euro 2 to Electric
- 57 RT Diesel Hire Euro 3 to Electric
- 58 RT Diesel Hire Euro 4 to Electric
- 59 RT Diesel Hire Euro 5 to Electric
- 60 RT Diesel Hire Euro 6 to Electric
- 61 RT Diesel LGV pre-Euro 1 to Electric
- 62 RT Diesel LGV Euro 1 to Electric
- 63 RT Diesel LGV Euro 2 to Electric
- 64 RT Diesel LGV Euro 3 to Electric
- 65 RT Diesel LGV Euro 4 to Electric
- 66 RT Diesel LGV Euro 5 to Electric
- 67 RT Diesel LGV Euro 6 to Electric
- 68 RT Diesel Hire to Electric
- 69 RT 2 Wheeler to Electric
- 70 RT Diesel cars to Euro 5
- 71 RT Petrol cars to Euro 5
- 72 RT Diesel Hire to Euro 5
- 73 RT Diesel LGV to Euro 5
- 74 RT Petrol cars to Euro 5
- 75 RT Petrol cars to Euro 5
- 76 RT Petrol cars to Euro 5
- 77 RT Petrol cars to Euro 4
- 78 RT Petrol cars to Euro 4
- 79 RT Petrol cars to Euro 4
- 80 RT Petrol cars to Euro 4
- 81 Domestic Homes - Retrofit cavity wall
- 82 Domestic Homes - Retrofit loft insulation
- 83 Domestic Homes - Domestic thermal
- 84 Domestic Homes - Boiler efficiency
- 85 Commercial Buildings - Dry lining of solid wall
- 86 Commercial Buildings - External insulation of solid wall
- 87 Commercial Buildings - Injection of cavity wall insulation
- 88 Commercial Buildings - Metal deck flat roof insulation
- 89 Commercial Buildings - Timber deck flat roof insulation
- 90 Commercial Buildings - Re-lining of pitched roof
- 91 Commercial Buildings - Re-lining of pitched roof
- 92 Commercial Buildings - Boiler replacement
- 93 Power Stations - SCR to Power Station

Buses & HGVs – measures on buses and HGVs (32)

Other road – measures on cars, LGVs and diesel vehicles (48)

Behavioural – measures around commercial and domestic buildings and downsizing cars (12)