

# Department for Environment, Food and Rural Affairs

## Summary of responses to the Consultation on the draft UK notification to the European Commission to secure additional time to meet the limit values for particulate matter (PM<sub>10</sub>) for certain zones/agglomerations in accordance with Council Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe.

Consultation period: 27 January - 10 March 2009

April 2009

### Introduction

1. A consultation on the draft UK notification to the European Commission to secure additional time to meet the limit values for PM<sub>10</sub> for eight UK zones/agglomerations in accordance with Council Directive 2008/50/EC on ambient air quality was published on 27 January 2009 and closed on 10 March.
2. The consultation was prepared jointly by the Department for Environment, Food and Rural Affairs (Defra) and the Welsh Assembly Government and covered England and Wales. The draft UK notification included one agglomeration zone in Scotland and the Scottish Government carried out an identical consultation exercise there.
3. The purpose of the notification is to secure, for eight zones/agglomerations in England, Scotland and Wales, an exemption from the obligation to apply the limit values for PM<sub>10</sub> until 2011, as provided for under the new ambient air quality directive. The notification must cover those zones where, following permissible data corrections, exceedences have been reported since the limit value came into force in 2005. It is presented in the Commission's recommended format to meet the requirements of Article 23 of the Directive including how the limit values will be achieved in these areas by the extended deadline of 2011.
4. Further details of the consultation can be found on the Defra website (<http://www.defra.gov.uk/corporate/consult/air-quality/index.htm>).
5. Thirty-eight responses to the consultation were received, from a variety of interested organisations and individuals. A full list of those who responded can be found in **Annex A** at the end of this document.
6. The table below summarises the main issues raised and the UK Government response. A number of changes have been made to the Forms and the Technical Report as a result of the comments made. We expect to submit the notification to the European Commission shortly and will publish the documents on Defra's website. The Commission has 9 months to assess any notification.

<b>Main issues raised in consultation responses and the UK Government response</b>	
<b>Main issue</b>	<b>Government response</b>
Reference to data from King's College London that PM <sub>10</sub> concentrations are increasing not decreasing in London	It is recognised that PM <sub>10</sub> concentrations have not been declining as much as expected in recent years. This is also occurring across Europe. However, in the 8 zones covered in our notification, projections indicate achievement of compliance by 2011. Monitoring and assessment is ongoing and additional actions will be taken if necessary. Technological measures to coming into effect on the exceeding road lengths are known to have large impacts on particulate matter and lend confidence to the projections.
Specific conditions in the Directive for justifying a PM10 Time Extension Notification are not met (all appropriate measures taken, and limit values could not be met due to one or more of : site specific dispersion characteristics, adverse climatic conditions, transboundary contributions);	For each of the 8 zones covered in the UK draft notification the analysis demonstrates that the pre-conditions for a time extension notification have been met. In relation to 'all appropriate measures' being taken, these are set out in Form 6. Form 10 sets out for each zone the reasons for non-compliance. Where site specific dispersion characteristics are cited, information on street geometry is described for each exceedence situation. The Technical Report contains discussion of the methodology for calculating the contribution from transboundary pollution. Throughout the analysis the estimates are conservative and are likely to underestimate the contribution from transboundary sources. The European Commission will judge of the adequacy of the UK notification however, and they will have 9 months to do so from the date it is submitted. Comments on transboundary pollution not existing at Marylebone Road are not supported by the peer reviewed literature cited in Annex B (Technical Report). The assessment of the street canyon for Marylebone Road was carried out by the Air Quality Experts Group as referenced.
<b>Local authority air quality management (LAQM) issues:</b> Differences between national and Local Authority modelling; why has local monitoring not been used? ; clarification of Local Authority obligations for Air Quality Management Areas (AQMA's) required; lack	<p>The UK assessment for the purpose of the UK notification to the European Commission is based solely on national modelling (via the Pollution Climate Mapping model) and monitoring from within the Automatic Urban and Rural Network (AURN). The monitoring network and model were set-up to ensure compliance with the siting (monitoring only) and data quality requirements within the air quality Daughter Directives. Local authority monitoring and modelling is generally undertaken to fulfil Review and Assessment purposes under LAQM and as such has different siting criteria and data quality objectives to the more stringent Daughter Directives. There will be differences between national and local modelling due to differences in the assumptions and the methods used. It is recognised that local knowledge may provide extra information that may remove or include an exceedence location. However it is extremely difficult to include large amounts of local information into the national model. Clarification on this point has been provided in the accompanying technical document. On the question of consultation, Defra officials met with those local authorities in London which on our initial analysis were predicted to have exceedences in 2011. All local authorities to be included in the application were asked to provide information on the measures they had taken to manage air quality locally.</p> <p>The notification recognises that local measures have not been quantified. We will be working to strengthen capacity within local authorities on this. The recent revision of the guidance for Local Air Quality Management has provided extra</p>

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of consultation at local level; need for quantification of impact of local measures.	guidance on quantifying local authority measures, specifically on low emission zones, low emission vehicles and retrofitting. It is recognised that some measures are extremely difficult to quantify at local, regional or national level. Where possible regional measures will be incorporated into the national modelling.
<b>London air quality:</b> queries on the conclusion that compliance will be achieved by 2011 without more measures; why not use the London Atmospheric Emissions Inventory (LAEI) instead of the National Atmospheric Emissions Inventory (NAEI); the modelling needs to be reviewed in light of the Mayors announcements on Low Emission Zone (phase 3) and the Western Extension to the congestion charging zone.	The modelling for London includes assessment of the impacts of phase 3 of the London Low Emission Zone (LEZ) and the Western Extension. Whilst the London Mayor has indicated his intentions to suspend or remove these measures, final decisions will be subject to consultation which will take place between now and 2011. Should the Mayor decide to suspend Phase 3 of the LEZ, we would expect him to put in place other measures that would deliver equal, if not greater, improvements to air quality. Furthermore, the UK Government and the Mayor of London have committed to working together to identify further measures, to ensure the UK will meet the limit value for PM10 in 2011. These measures could include national, London and local measures as necessary. The Government will continue to work with the GLA on this. These points have been included in the Technical Report so that the basis for the modelling is transparent to the assessors. National assessment is required to use consistent methods across the country and so the NAEI was used rather than the LAEI in London.
Queries over the methodology used for deduction of natural sources	The accompanying Technical Report contained an error in the table numbering which may have led to some mis-reading of the tables. This has been corrected. Directive 2008/50/EC allows the removal of natural sources (Article 20) for the purposes of assessment of Member State's compliance with Limit Values. This is not applicable to assessment against UK National Air Quality Strategy objectives. Natural sources will not be removed from publicly available data on the Air Quality Archive ( <a href="http://www.airquality.co.uk">www.airquality.co.uk</a> ) or in any assessment other than against the EU Limit Values under 2008/50/EC. Within Form 10, transboundary contributions have only been subtracted from the data to show reasons for non-compliance and not for other reporting purposes.

<b>Main issues raised in consultation responses and the UK Government response</b>	
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Queries on how compliance will be maintained beyond 2011	The UK's application for time extension states that the number and extent of PM <sub>10</sub> exceedences is declining over time. Current modelling demonstrates that we will come into compliance by 2011. The UK will continue to monitor and report on compliance post 2011 and where necessary will take measures to continue to bear down on particulates pollution. The UK's Air Quality Strategy 2007 sets out the government's approach to improving air quality in the UK and the national measures it will pursue to improve air quality. Also at local level local authorities continue to be responsible for monitoring and managing local air quality and for taking action where air quality objectives are under risk. In London the GLA also has a responsibility to improve air quality and to produce an air quality strategy which sets out what action it will take to this end.
More additional measures are needed to achieve compliance by 2011	The methodology for assessing the extent of exceedences in 2011 is the same as that used for the UK's annual reports to the European Commission on compliance with the Air Quality Directives. This has proved to be a robust methodology and is fully compliant with the data quality requirements laid down by the Directives. That having been said, we acknowledge in the report that there is uncertainty in the projections, and we cannot rule out the possibility that additional measures, above and beyond those contained in the baseline, may be needed to secure and maintain full compliance with the limit values. Monitoring will be ongoing and the need for additional action will be kept under review. In relation to London, the commitment by the Mayor of London and the Government to work together to ensure compliance reflects this.
Additional public health problems will be caused by delaying compliance to 2011	The remaining areas of non-compliance within the eight relevant zones is extremely small. Limits are already met across 99% of the UK. The latest evidence of the health effects of particulate pollution, including the COMEAP report on the impact of air pollution on mortality, indicates that there is no safe threshold for fine particles, and that health benefits are gained whenever levels of exposure are reduced. This evidence has informed the development of the exposure reduction concept, contained both in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland, and the new Ambient Air Quality Directive (2008/50/EC). As such we are committed to developing policies which reduce the average exposure of the population to fine particles and thus maximise the health benefit gained from such policies. The exposure reduction approach also implies that the pursuit of compliance with fixed limit values at a small number of locations does not, necessarily, maximise the health benefit gained, nor does it benefit the population as a whole. Therefore, committing greater Government expenditure towards a more accelerated programme of compliance may well mean diverting resources from policies and measures which could have a wider effect and a more extensive health benefit.
Technical queries on the modelling approach and baseline measures	<p>The Pollution Climate Mapping (PCM) model has been utilised in the UK for over a decade and has been developed to its current version over this time following improvements in our understanding of the various components of particulate matter. The PCM methodology is the same as that used for the UK's annual reports to the European Commission on compliance with the Air Quality Directives. This has proved to be a robust methodology and is fully compliant with the data quality objectives laid down by the Directives. However, we acknowledge that there are uncertainties within this methodology (as there are for all projection methodologies), and that alternative modelling tools are constantly being developed and improved.</p> <p>It is intended to put in place a long-term modelling strategy following a review being undertaken by Defra in 2009-10. It is the intention to use the CMAQ model (developed initially by the Environmental Protection Agency in the USA) in the first instance to support PCM modelling if possible. This was not possible for this assessment due to the consistency of assessments required. It should also be</p>

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	noted that the relationship between ambient concentrations of particles and the emission of particles and their pre-cursor gases is a complex one and not all of the processes are fully understood by the scientific community. The approach we use relies in part on the Pragmatic Mass Closure methodology developed by University of Birmingham and extensively published in peer reviewed literature to ensure modelled concentrations relate closely to monitored levels.
Use of corrected gravimetric measurements	The issues with gravimetric measurements and the need for their correction were not ideal; however this is the only data available which we know is equivalent to the reference method required by the Directives. TEOM x 1.3 is widely used in the UK but has been shown to not be equivalent. FDMS-TEOM data was not widely available in the UK until 2007/8 and could not be used for 2005 or 2006.
Queries on the assessments of current and future transport measures (including comments that there should be more LEZ's)	The UK draft notification makes the case that the UK will come into compliance with the limit value deadline by 2011 on the basis of current and planned measures, many of which are transport related. In London, the Government is working with the GLA to identify what further measures might be necessary and to ensure that the limit value is met. Through the national Air Quality Strategy, the Government will also keep its approach to air quality under review and assess new measures as necessary. Measures to reduce exceedences from nitrogen dioxide will also help to keep downward pressure on PM <sub>10</sub> .
Concern about the risk of biomass policies worsening air quality	<p>Targets and policies being developed under the Renewable Energy Strategy will result in a large scale expansion of the renewable heat sector, including biomass heat, albeit from a very low level in the UK. The main policy driver for this uptake in England will be a Renewable Heat Incentive. The design of the incentive will take into account the projected and potential impact of biomass heat on air quality. Moreover, the rate of biomass heat uptake will be greatest between 2015 and 2020; there is unlikely to be significant national uptake before 2011.</p> <p>We recognise that there are a number of other policy drivers which may lead to proposals for biomass heat plant in, for example, planning applications, including the "Merton rule". Local authorities are, of course, free to adopt their own policies with regard to such application, having regard to planning policy guidance (PPG23), and the recently issued guidance on LAQM. In addition, in the consultation on the Renewable Energy Strategy published in June 2008, the Government is committed to providing local authorities with guidance based on its research into the potential effects on biomass heat on air quality. This commitment will be fulfilled shortly.</p>
Omission of alternative PM <sub>10</sub> sources (tyres/brakes, gas boilers)	Gas heating and tyre and brake wear are included in the emissions inventory and also in the modelling. The report focuses on vehicle emissions because the modelling found no urban background areas exceeding in London.

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<p>Swansea, Port Talbot : sources of pollution and compliance prospects; amend Form 7 Environmental Permitting Regulations; status of the Short Term Competent Authority Action Plan; need for tighter pollution controls at the steelworks;</p>	<p>Form 7 'local' has been amended to include commentary on the measures being applied under the Environmental Permitting Regulations for the installations on the steelworks site at Port Talbot that are regulated by the Environment Agency. The accompanying Technical Report has also been amended to reflect this.</p> <p>The Welsh Assembly Government is currently considering the detailed responses to the consultation on Short Term Competent Authority Action plans that concluded at the end of 2007. They will publish a summary of those responses and its response shortly.</p> <p>The Welsh Assembly Government considers the steelwork site to be a significant contributor to the PM10 pollution within the Neath Port Talbot area Air quality Management area. However, It is also clear that a proportion of PM10 pollution affecting the area is derived from other sources such as transport, trans-boundary pollution and natural factors such as sea salt. It is vital to have a full understanding of particulate matter pollution within the area in order to effectively target measures to mitigate pollution from all sources. The Welsh Assembly Government's Short Term Competent Authority Action plan is detailed within Chapter 10 of the UK Technical Report which accompanies the Forms. Key to that Action Plan is a consideration of environmental permits held by owners or operators of potential sources of pollution which may contribute to the risk that a relevant limit value or alert threshold will be exceeded.</p> <p>As set out in the consultation, all zones/agglomerations where, following permissible data corrections, the UK reported exceedences of PM<sub>10</sub> limit values since 2005 must be included in the time extension notification, even if they are now in compliance</p> <p>For 2007, the UK submitted an objective estimation of a breach of the daily mean air quality standard. Provisional data for 2008 indicates compliance in the Swansea Urban Area for 2008. However the Welsh Ministers will continue to implement the actions set out in the Short term air quality action plan to ensure continued compliance with the standards.</p>
<p>Queries on the measure selected in the Impact Assessment: it would have been more sensible to consider London wide measures which might have fared better in the cost benefit analysis; incentives for the adoption of cleaner vehicles should be explored.</p>	<p>Given the date for compliance with the limit value was 2005, if the UK did not proceed with a time extension notification, allowing current and planned measures to take effect, the only other option available would involve immediate mitigating action in all the relevant UK zones to achieve earlier compliance. The Impact Assessment illustrates the potential costs and benefits of this. The national measures in the 2007 UK Air Quality Strategy which had positive net benefits are being pursued (including exploring incentives for purchasing cleaner vehicles) and further improvements will likely cost more than the value of the health benefits. Referring back to the 2007 Air Quality Strategy, retrofitting was the most effective potential option on the basis of monetary cost, technical feasibility and practicability. That is why a large scale retrofitting of DPF's was the option considered. While it is possible that a portfolio of local schemes might deliver the objective at lower cost, a national measure is preferable both to ensure certainty and the necessary speed of action. If additional measures are needed in London to meet the limit value by 2011, the Government and the Mayor are committed to working together to define the most appropriate ones.</p>

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Impact of Heathrow on air quality in the local area - include 2M rail schemes.	Monitoring data shows compliance with PM <sub>10</sub> limit values around Heathrow. NO <sub>2</sub> is the main pollutant of concern in that area, which is in the Greater London zone/agglomeration. The UK Government has signalled its intention to submit a time extension notification to secure the additional time available to meet the NO <sub>2</sub> limit value and this will need to set out how the limit value will be achieved in Greater London, including around Heathrow, by 2015. We expect to consult on proposals later this year.
Peer Review required of the Technical Report Annex B	Peer review of the Technical Report was not possible on the timescales required to submit the application to the European Commission. It should be noted that the Pollution Climate Mapping model has been considered by the Air Quality Expert Group during the course of its discussions on PM <sub>10</sub> , NO <sub>2</sub> and primary NO <sub>2</sub> and has been improved following those discussions. The model has also been the subject of several articles in peer-reviewed journals. The methods used are also publicly available in the reports produced for the UK compliance assessment of the EU Limit values <a href="http://www.airquality.co.uk/archive/reports/cat09/0807231621_dd12006mapsrep_v2.pdf">http://www.airquality.co.uk/archive/reports/cat09/0807231621_dd12006mapsrep_v2.pdf</a> .
Difficulty in accessing website consultation documents; documents difficult to read	The notification to the Commission has been drafted according to guidance published by the European Commission and using their recommended format. We agree that this format is not easy to read and understand, but those technical experts who will be assessing the UK application will be expecting it to be submitted in this format.
Scunthorpe/Low Santon: concerns over compliance prospects	Modelling in the assessment was undertaken using a 2005 base year, which is generally classified as a fairly typical pollution year. The European Commission expected Member States to use 2005 as the base year for their PM <sub>10</sub> applications. The exceedences at the local authority site at Low Santon are noted and although these have not been taken into account within the assessment, text has been amended within the accompanying technical report
Clarify UK's rationale for defining zones	The relevant Directive gives discretion to Member States in defining zones, but this determines how compliance is reported. In England zones are defined as the Government Office regions. The Welsh Ministers have divided Wales into two zones, North Wales and South Wales and identified two agglomerations in the Swansea and Cardiff Urban Areas. Scotland is divided into 4 zones, along administrative boundaries. Agglomerations are defined in the Directive as urban areas over 250,000 population. When presenting summary data on exceedences across Member States, the Commission and European Environment Agency tend to represent Member States exceedences in terms of the number of zones. It is important to note that this does not reflect the area of exceedences. In the UK, where zones are relatively large compared with some Member States, the areas where exceedences are reported are generally extremely small.

## **Annex A – List of those who responded to the Consultation**

- 2M Group
- Barry & Vale Friends of the Earth
- Basildon District Council
- Campaign for Clean Air in London
- City of London Corporation
- Councillor Darren Johnson AM, Green Party Member of the London Assembly
- Dr Peter Foreman
- Environment Agency
- Environmental Industries Commission
- Environmental Protection UK
- Falkirk Council
- Freight Transport Association
- Friends of the Earth
- Greater London Authority/Transport for London
- Heathrow Airport Consultative Committee
- Institute for Air Quality Management
- King's College London
- Local Authorities Coordinators of Regulatory Services
- London Borough of Barnet
- London Borough of Enfield
- London Borough of Waltham Forest
- Mr B Burke
- Mr David Edmond
- Mr Eric Olson
- Mr J B Hughes
- Mr James Greyson
- Mr John D. Hall
- Mr Peter Wilson
- Mr Tim J Henderson
- North Lincolnshire Council
- P Carder
- Proteus Public Relations Limited
- Scottish Environment Protection Agency
- South Oxfordshire District Council
- The Law Society
- UK Public Health Association
- West London Air Quality Group
- Westminster City Council