

Re-Notification of the Air Quality Plan to meet the Annual Mean NO₂ Limit Value in the Preston Agglomeration, UK (UK0023)

Summary

Updated monitoring and modelling data underpinning the latest UK projections show that the current and planned measures set out in the existing Air Quality Plan for the Preston Agglomeration (UK0023) will achieve compliance with the annual mean limit value for nitrogen dioxide (NO₂) by 1 January 2014. We would ask that the Commission assess the new evidence presented in this Re-Notification and the accompanying Time Extension Notification (TEN) Forms¹ for the Preston Agglomeration under Article 22 of the Ambient Air Quality Directive (2008/50/EC) and confirm that the conditions of a time extension until January 2014 have been met.

Introduction

In September 2011, the UK Government submitted to the European Commission an Air Quality Plan for the Preston Agglomeration (UK0023) setting out the measures in place or being planned to deliver compliance with the annual mean limit value for NO₂ (40 µg/m³). A case for postponement of the compliance deadline to 2015 was made, in accordance with Article 22 of the Ambient Air Quality Directive (2008/50/EC). The Plan projected that, as a result of current and planned measures, NO₂ concentrations would reduce from just over 40 µg/m³ in 2010 to 27 µg/m³ by 2015 therefore achieving compliance with the annual limit value.

In June 2012, Commission Decision C(2012)4155² was published, which set out the Commission's conclusions on the UK Air Quality Plans that were submitted in September 2011. The Decision raised objections to the postponement of the deadline for attaining the annual limit value for NO₂ in the Preston Agglomeration having considered that:

The United Kingdom authorities have provided projections which show compliance with the annual NO₂ limit value already in 2010. The official annual air quality report for 2010 provided by the United Kingdom however lists those zones as in exceedence of the annual NO₂ limit value. As the exceedence is a modelled

¹ The revised TEN Forms for the Preston Zone are available here: <http://uk-air.defra.gov.uk/library/no2ten/index>. Only Forms that have been revised should be considered.

² http://ec.europa.eu/environment/air/quality/legislation/pdf/uk2_no2_en.pdf.

exceedence, no indication is given about the proportion of exceedence in 2010. Considering the discrepancy between the projected 2010 NO₂ annual concentration levels and the information provided in the annual air quality report on 2010 and the lack of explanation thereof, the Commission finds that it cannot fully assess whether a postponement is needed and if yes whether the proposed abatement action is sufficient for achieving compliance with the annual limit value for NO₂ by 1 January 2015 and if it could be achieved earlier.

This Re-Notification responds to Commission Decision C(2012)4155 following a review by UK authorities of the latest compliance evidence, using more recent NO₂ concentration data and projections than those included in the existing Plan submitted in September 2011. This Re-Notification should be considered as an addendum to the existing Plan, which is available online³.

Review of the latest compliance evidence

For the September 2011 Plan, 2008 was used as the reference year. In this Re-Notification, the UK authorities used 2010 concentration data as the reference year. Table 1 presents the measured annual mean concentrations at national network monitoring stations in this zone, including the data recently submitted as part of the 2011 compliance assessment. Since 2007, there have been no measured exceedences in this zone. Table 2 presents the modelled annual mean NO₂ results in this zone. There were no modelled background exceedences of the limit value in 2010 or in any other year.

Table 1: Measured annual mean NO₂ concentrations at national network stations in the Preston Agglomeration, µgm⁻³. (Data capture shown in brackets)

Zone code	Agglomeration name	Site	2007	2008	2009	2010	2011
UK0023	Preston Urban Area	Preston (GB0731A)	23 (96%)	21 (88%)	24 (78%)	39 (74%)	31 (98%)

³ <http://uk-air.defra.gov.uk/library/no2ten/documents/UK0023.pdf>

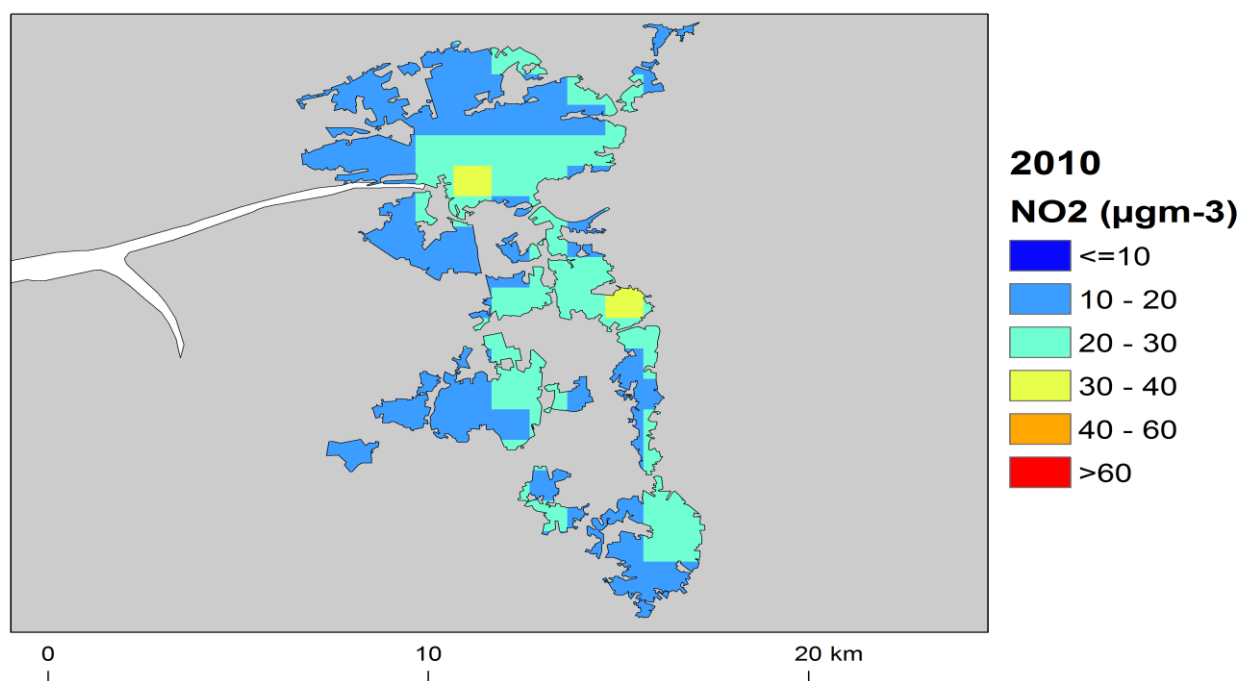
Table 2: Annual mean NO₂ model results for the Preston Agglomeration.

	Assessment Data				
	2007	2008	2009	2010	2011
Road length exceeding (km)	6.3	3.5	4.9	7.7	1.0
Background area exceeding (km ²)	0.0	0.0	0.0	0.0	0.0
Maximum modelled concentration (µg/m ³)	48	47	46	47	41

1. The location of the maximum modelled concentration for 2010 is road link A583, location 353600, 429700.
2. The data for 2010 are not those from the 2010 compliance assessment as the emissions factors have been updated after this was reported and the results recalculated.

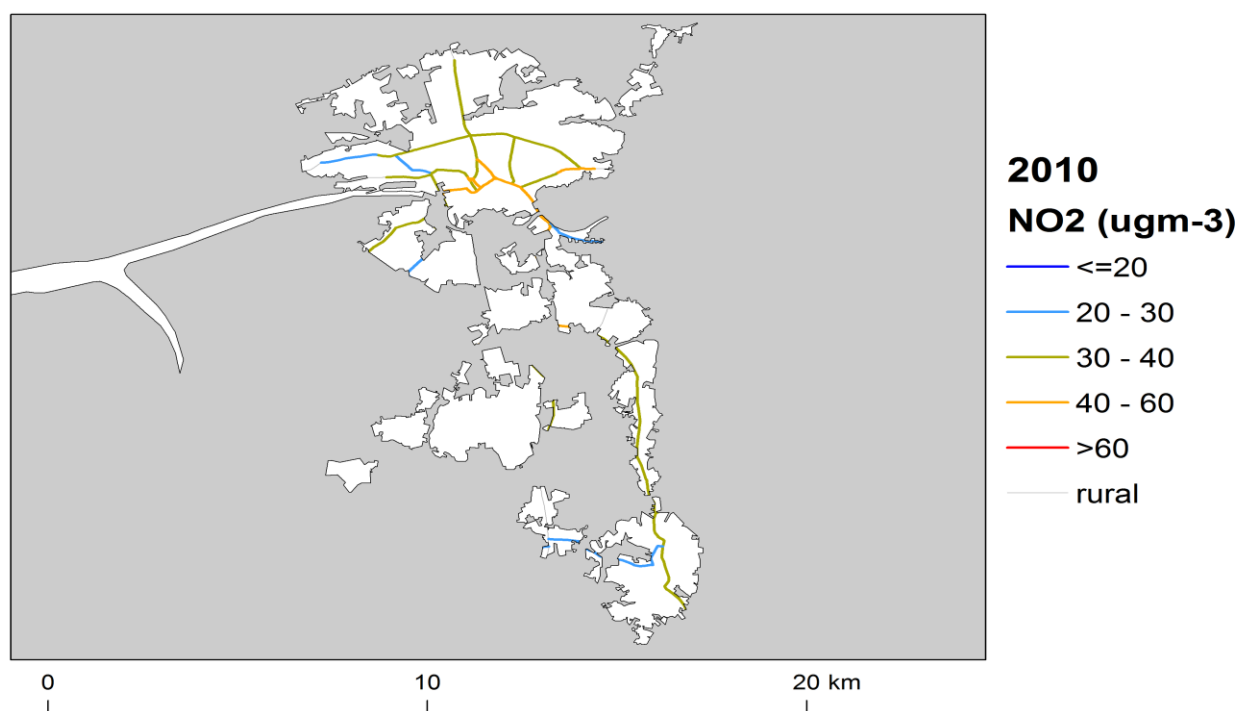
Maps showing the modelled annual mean NO₂ concentrations for 2010 at background and at roadside locations are presented in Figures 1 and 2 respectively.

Figure 1: Map of modelled background annual mean NO₂ concentrations 2010.



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Figure 2: Map of modelled roadside annual mean NO₂ concentrations 2010.



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Baseline model projections

The modelling and projections that were used to underpin the Plan for the Preston Agglomeration submitted in September 2011 have been significantly updated in 2012 and now show a more realistic assessment of future NO₂ concentrations. It is on this basis that this Re-Notification is made.

As foreshadowed in the UK Overview Document submitted in September 2011, the UK authorities have incorporated the latest COPERT vehicle emission factors (version 4.8) and updated fleet data based on ANPR (Automatic Number Plate Recognition) technology into the latest projections. Both of these changes are an improvement on the previous projections, notably the COPERT emission factors as they are based on real world emissions.

The overall (UK) impact of the new emission factors and updated fleet data is that the new projections generally predict concentrations decreasing more slowly into the future than the previous projections. However, the impact varies between locations according to the fleet mix on the individual road. In this zone the predicted rate of decline in NO₂ concentration at the location with the highest modelled concentration is predicted to be somewhat less steep than in the previous projections. These previous projections also predicted a decline between 2008 and 2010 but it is clear from the data presented in Table 2 that this did not happen as a result of combination of a lack of decline in real world emissions of NO_x from road traffic sources and the unusual weather conditions in 2010.

We also now know that NO_x emissions and ambient concentrations in 2010 were significantly influenced by extreme cold weather spells at the start and end of the year and that in 2011, emissions and concentrations returned to the overall trend. Monitoring data from across the UK's compliance monitoring network have been compared for the years 2008, 2009, 2010 and 2011 by calculating the mean concentration for each station type for stations that have at least 75% data capture in all of these years. It is clear that concentrations in 2010 were higher on average than in other recent years for both NO_x and NO₂. Therefore a scaling factor (0.94) has been calculated from the difference between the measured NO₂ concentration in 2010 and the values interpolated between 2009 and 2011. Projections have been calculated with and without this scaling factor. The projections with the scaling factor are presented here as a sensitivity test to estimate projected concentrations for future years with the influence of the unusual weather in 2010 on emissions and ambient concentrations removed.

In the Preston Agglomeration, this updated evidence shows that compliance will be achieved by 1 January 2014. The new baseline projections for 2014 are shown in Table 3. Projections for 2015 are also shown for information.

Table 3: Annual mean NO₂ modelled baseline projections for 2014 and 2015 for the Preston Agglomeration.

	Baseline Projections	Baseline projections with scaling factor applied ³	Baseline Projections	Baseline projections with scaling factor applied ³
	Year 2014	Year 2014	Year 2015	Year 2015
Road length exceeding (km)	0.0	0.0	0.0	0.0
Background area exceeding (km ²)	0.0	0.0	0.0	0.0
Maximum modelled concentration (µg/m ³)	39	37	38	35

3. The projections with the scaling factor are presented here as a sensitivity test to remove the influence of the unusual weather conditions in 2010.

Measures Implementation

As demonstrated by the reduction in annual mean NO₂ concentrations and road length exceeding the annual mean NO₂ limit, the existing measures set out in the Plan for the

Preston Agglomeration submitted in September 2011 are reducing NO₂ concentrations and will deliver compliance by 1 January 2014.

Many of the measures are based on strategies which aim to encourage modal shift in transport. Measures such as developing park & ride schemes and extending the cycle network are included in the Plan. It should also be noted that local authority action plans have a role to play in improving local air quality though small scale measures are very difficult to quantify and include in the new projections.

Conclusion

The updated evidence presented in this document shows that compliance with the annual mean NO₂ limit in the Preston Agglomeration is expected by 1 January 2014. As such, we would ask that the Commission assess this Re-Notification in accordance with the provisions set out in Article 22 of Directive 2008/50/EC with a view to confirming that the conditions for a time extension until 1 January 2014 have been met.

December 2012