



Department
for Environment
Food & Rural Affairs



Department
for Transport

Air Quality Plan for tackling roadside nitrogen dioxide concentrations in North East Scotland (UK0038)

July 2017



Scottish Government
Riaghaltas na h-Alba
gov.scot



Department of
Agriculture, Environment
and Rural Affairs
www.daera-ni.gov.uk



Llywodraeth Cymru
Welsh Government



© Crown copyright 2017

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v.3. To view this licence visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3/ or email PSI@nationalarchives.gsi.gov.uk

Any enquiries regarding this publication should be sent to us at:

air.quality@defra.gsi.gov.uk

www.gov.uk/defra

Contents

1	Introduction	3
1.1	This document	3
1.2	Context	3
1.3	Zone status	3
1.4	Plan structure	4
2	General Information About the Zone	4
2.1	Administrative information	4
2.2	Assessment details	6
2.3	Air quality reporting	8
3	Overall Picture for 2015 Reference Year	8
3.1	Introduction	8
3.2	Reference year: NO ₂ _UK0038_Annual_1	8
4	Measures	13
4.1	Introduction	13
4.2	Source apportionment	13
4.3	Measures	13
4.4	Measures timescales	14
5	Baseline Model Projections	14
5.1	Overview of model projections	14
5.2	Baseline projections: NO ₂ _UK0038_Annual_1	15
	Annexes	20
A	References	20
B	Source apportionment graphs	21
C	Tables of measures	23

1 Introduction

1.1 This document

This document is the North East Scotland non-agglomeration zone (UK0038) updated air quality plan for tackling roadside nitrogen dioxide (NO₂) concentrations. This is an update to the air quality plan published in December 2015 (<https://www.gov.uk/government/collections/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2015>).

This plan presents the following information:

- General information regarding the North East Scotland non-agglomeration zone
- Details of NO₂ exceedance situation within the North East Scotland non-agglomeration zone
- Details of local air quality measures that have been implemented, will be implemented or are being considered for implementation in this non-agglomeration zone

This air quality plan for the North East Scotland non-agglomeration zone should be read in conjunction with the separate UK Air Quality Plan for tackling roadside nitrogen dioxide concentrations (hereafter referred to as the overview document) which sets out, amongst other things, the authorities responsible for delivering air quality improvements and the list of UK and national measures that are applied in some or all UK zones, and 'Cleaner Air for Scotland - The Road to a Healthier Future'.¹ Cleaner Air for Scotland sets out in detail how Scotland intends to deliver further improvements to air quality over the coming years, including full compliance with Directive requirements in Scotland. The measures presented in this zone plan, Cleaner Air for Scotland, and the accompanying UK overview document show how the UK will ensure that compliance with the NO₂ limit values is achieved in the shortest possible time.

This plan should also be read in conjunction with the supporting UK Technical Report which presents information on assessment methods, input data and emissions inventories used in the analysis presented in this plan.

1.2 Context

Two NO₂ limit values for the protection of human health have been set in the Air Quality Directive (2008/50/EC). These are:

- The annual mean limit value: an annual mean concentration of no more than 40 $\mu\text{g}\text{m}^{-3}$
- The hourly limit value: no more than 18 exceedances of 200 $\mu\text{g}\text{m}^{-3}$ in a calendar year

The Air Quality Directive stipulates that compliance with the NO₂ limit values will be achieved by 01/01/2010.

1.3 Zone status

The assessment undertaken for the North East Scotland non-agglomeration zone indicates that the annual limit value was exceeded in 2015 but is likely to be achieved by 2020 through the introduction of measures included in the baseline.

¹<http://www.gov.scot/Publications/2015/11/5671>

1.4 Plan structure

General administrative information regarding this non-agglomeration zone is presented in Section 2.

Section 3 then presents the overall picture with respect to NO₂ levels in this non-agglomeration zone for the 2015 reference year of this air quality plan. This includes a declaration of exceedance situations within the non-agglomeration zone and presentation of a detailed source apportionment for each exceedance situation.

An overview of the measures already taken and to be taken within the non-agglomeration zone both before and after 2015 is given in Section 4.

Baseline modelled projections for each year from 2017 to 2030 for each exceedance situation are presented in Section 5. The baseline projections presented here include, where possible, the impact of measures that have already been taken and measures for which the relevant authority has made a firm commitment to implement. However, it has not been possible to quantify the impact of all the measures. This section therefore also explains which measures have been quantified, and hence included in the model projections, and which measures have not been quantified.

2 General Information About the Zone

2.1 Administrative information

Zone name: North East Scotland

Zone code: UK0038

Type of zone: non-agglomeration zone

Reference year: 2015

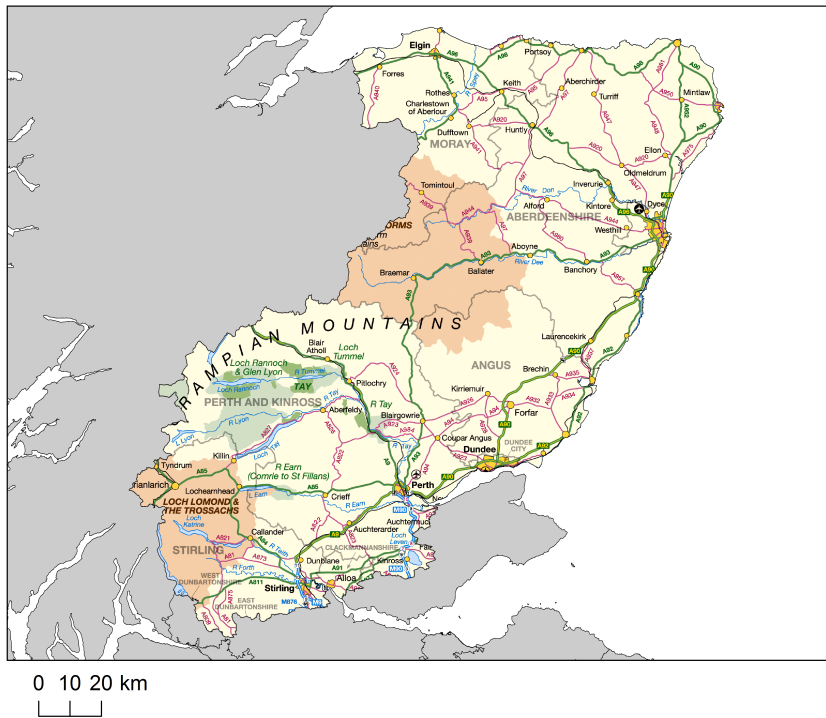
Extent of zone: Figure 1 shows the area covered by the North East Scotland non-agglomeration zone.

Local Authorities within the zone: Figure 2 shows the location of Local Authorities within the non-agglomeration zone. A list of these Local Authorities is also given below. The numbers in the list correspond to the numbers in Figure 2.

1. Aberdeen City Council
2. Aberdeenshire Council
3. Angus Council
4. Clackmannanshire Council
5. Dundee City Council
6. Moray Council
7. Perth & Kinross Council
8. Stirling Council

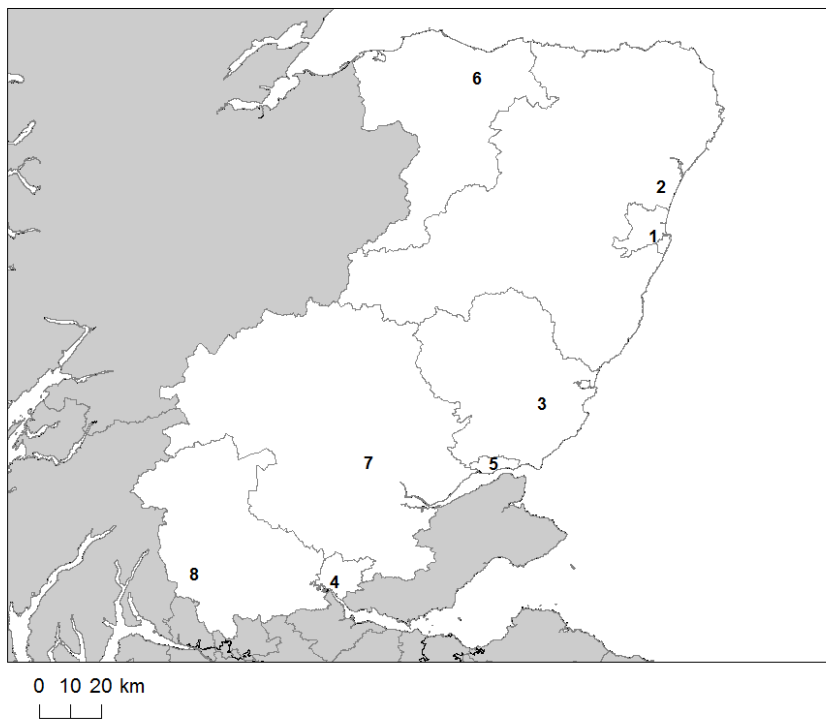
(Note: Local Authority boundaries do not necessarily coincide with zone boundaries. Hence Local Authorities may be listed within more than one zone plan.)

Figure 1: Map showing the extent of the North East Scotland non-agglomeration zone (UK0038).



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

Figure 2: Map showing Local Authorities within the North East Scotland non-agglomeration zone (UK0038).



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

2.2 Assessment details

Measurements

NO₂ measurements in this zone were available in 2015 from the following national network monitoring stations (NO₂ data capture² for each station in 2015 shown in brackets):

1. Aberdeen GB0729A (99%)
2. Aberdeen Union Street Roadside GB0923A (99%)

Full details of monitoring stations within the North East Scotland non-agglomeration zone are available from <http://uk-air.defra.gov.uk/networks/network-info?view=aurun>.

Modelling

Modelling for the 2015 reference year has been carried out for the whole of the UK. This modelling covers the following extent within this zone:

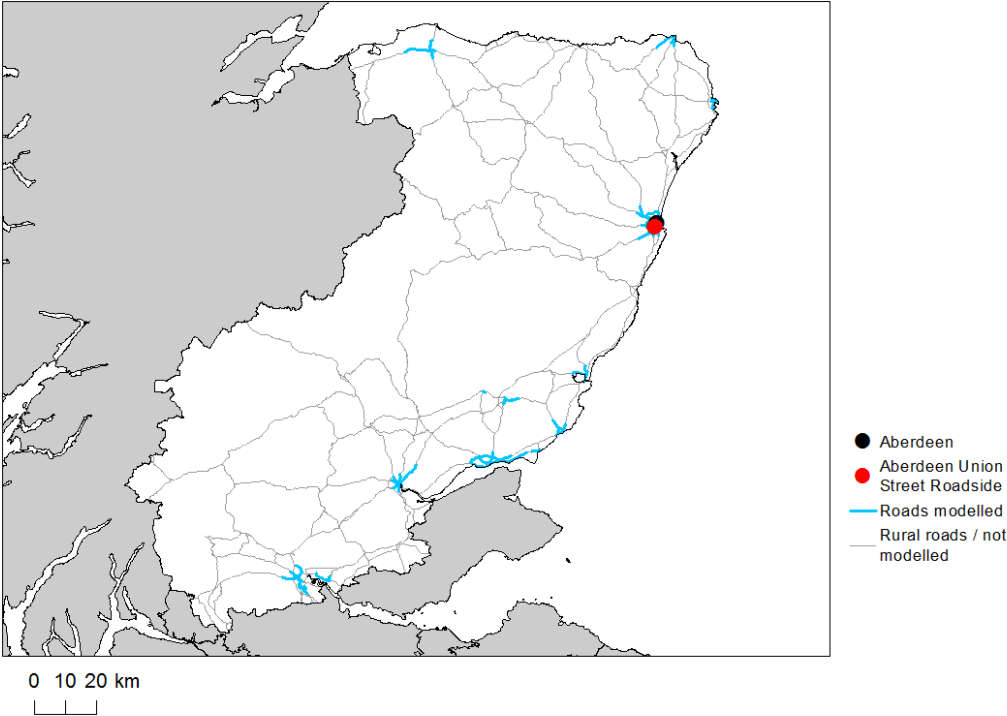
- Total background area within zone (approx): 19,024 km²
- Total population within zone (approx): 1,121,018 people

Zone maps

Figure 3 presents the location of the NO₂ monitoring stations within this zone for 2015 and the roads for which NO₂ concentrations have been modelled. NO₂ concentrations at background locations have been modelled across the entire zone at a 1 km x 1 km resolution.

²Annual data capture is the proportion of hours in a year for which there are valid measurements at a monitoring station, expressed in this document as a percentage. The Implementing Provisions on Reporting (IPR) guidance requires that a minimum data capture of 85% is required for compliance reporting (that is 90% valid data, plus a 5% allowance for data loss due to planned maintenance and calibration). Monitoring stations with at least 75% data capture have been included in the modelling analysis to ensure that a greater number of operational monitoring sites have been used for model calibration and verification purposes. For more information on compliance reporting under European Directives see Section 2.3.

Figure 3: Map showing the location of the NO₂ monitoring stations with valid data in 2015 and roads where concentrations have been modelled within the North East Scotland (UK0038) non-agglomeration zone.



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

2.3 Air quality reporting

From 2001 to 2012 the UK has reported annually on air quality concentrations using a standard Excel questionnaire (Decision 2004/461/EC). These questionnaires are available online from <http://cdr.eionet.europa.eu/gb/eu/annualair>. Since 2013 reporting has been via an e-reporting system (Decision 2011/850/EU) <http://cdr.eionet.europa.eu/gb/eu/>.

In addition, the UK has reported on air quality plans and programmes (Decision 2004/224/EC) since 2003. The most recent previous UK air quality plan for nitrogen dioxide was published in 2015. The plan and supporting documents are available at <https://www.gov.uk/government/collections/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2015> and the submission of this plan via e-reporting is published at <http://cdr.eionet.europa.eu/gb/eu/aqd/h/envvryhbq/>. Historic plans and programmes are available on <http://cdr.eionet.europa.eu/gb/eu/aqpp>.

3 Overall Picture for 2015 Reference Year

3.1 Introduction

There are two limit values for the protection of health for NO₂. These are:

- The annual limit value (annual mean concentration of no more than 40 µgm⁻³)
- The hourly limit value (no more than 18 hourly exceedances of 200 µgm⁻³ in a calendar year)

Within the North East Scotland non-agglomeration zone the annual limit value was exceeded in 2015. Hence, one exceedance situation for this zone has been defined, NO₂_UK0038_Annual_1, which covers exceedances of the annual limit value. This exceedance situation is described below.

3.2 Reference year: NO₂_UK0038_Annual_1

The NO₂_UK0038_Annual_1 exceedance situation covers all exceedances of the annual mean limit value in the North East Scotland non-agglomeration zone in 2015.

Compliance with the annual limit value in this exceedance situation has been assessed using a combination of air quality measurements and modelling. Table 1 presents measured annual concentrations at national network stations in this exceedance situation since the 1st Daughter Directive (1999/30/EC) came into force in 2001. This shows that there were measured exceedances of the annual limit value at Aberdeen Union Street Roadside (GB0923A) in 2015.

Table 2 summarises the maximum modelled annual mean NO₂ concentrations in this exceedance situation for the period 2001 to 2014. For 2015, there were seven locations across the UK where the measured NO₂ concentration exceeded the annual mean limit value of 40 µgm⁻³ and the measured concentration was greater than the modelled concentration for the road link adjacent to the monitoring station. In these situations, the measured 2015 annual mean concentration is used as the reference year value. This is a precautionary approach taking the higher NO₂ concentration out of the modelled and measured concentration at the location of monitoring stations in 2015. Where these measured concentrations correspond to the maximum concentration in the zone, the measured 2015 concentrations are included in Table 2 in place of modelled concentrations, for consistency with the projections (see Section 5.3). For years prior to 2015 only modelled results are presented in Table 2.

In the North East Scotland non-agglomeration zone the measured concentration at one monitoring station, Aberdeen Union Street Roadside (GB0923A; $46 \mu\text{g}\text{m}^{-3}$), exceeded the annual mean limit value in 2015 and was greater than the modelled concentration at the adjacent road link (traffic count point 50866 on the A9013) of $31 \mu\text{g}\text{m}^{-3}$. The road length in exceedance presented in Table 2 includes the length of road associated with traffic count point 50866 of 0.7 km.

Table 2 shows that, in 2015, 8.7 km of road length was modelled to exceed the annual limit value. There were no modelled background exceedances of the annual limit value. The models are updated each year to take into account the most up-to-date science, so the modelled results for different years may not be directly comparable. Maps showing the modelled annual mean NO_2 concentrations for 2015 at background and at roadside locations are presented in Figures 4 and 5 respectively (note that Figure 5 also includes the measured exceedance at Aberdeen Union Street Roadside). All modelled (and measured) exceedances of the annual limit value are coloured orange or red in the maps.

The modelling carried out for this exceedance situation has also been used to determine the annual mean NO_x source apportionment for all modelled locations. Emissions to air are regulated in terms of oxides of nitrogen (NO_x), which is the term used to describe the sum of nitrogen dioxide (NO_2) and nitric oxide (NO). Ambient NO_2 concentrations include contributions from both directly emitted primary NO_2 and secondary NO_2 formed in the atmosphere by the oxidation of NO. As such, it is not possible to calculate an unambiguous source apportionment specifically for NO_2 concentrations; therefore the source apportionment in this plan is presented for NO_x , rather than for NO_2 (for further details please see the UK Technical Report). Table 3 summarises the modelled NO_x source apportionment for the section of road with the highest NO_2 concentration in this exceedance situation in 2015. This is important information because it shows which sources need to be tackled at the location with the largest compliance gap in the exceedance situation.

Figure B.1 in Annex B presents the annual mean NO_x source apportionment for each section of road within the NO_2 _UK0038_Annual_1 exceedance situation (i.e. the source apportionment for all exceeding roads only) in 2015.

Table 1: Measured annual mean NO₂ concentrations at national network stations in NO₂_UK0038_Annual_1 for 2001 onwards, μgm^{-3} (a). Data capture shown in brackets.

Site name (EOI code)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Aberdeen (GB0729A)	25 (95)	27 (97)	31 (88)	26 (90)	24 (97)	27 (97)	24 (95)	25 (98)	26 (96)	22 (72)	23 (96)	21 (93)	20 (45)	21 (94)	23 (99)
Aberdeen Union Street Roadside (GB0923A)								55 (95)	52 (70)	58 (79)	44 (86)	53 (97)	48 (99)	47 (92)	46 (99)

(a) Annual Mean Limit Value = $40 \mu\text{gm}^{-3}$

Table 2: Annual mean NO₂ model results in NO₂_UK0038_Annual_1 for 2001 onwards.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015(b)
Road length exceeding (km)	18.9	4.6	49.3	36.4	35.0	32.8	30.8	18.4	24.9	32.1	17.2	15.9	7.9	5.3	8.7
Background exceeding (km ²)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Maximum modelled concentration (μgm^{-3}) (a)	51.0	44.5	65.7	57.9	59.7	58.9	56.0	53.9	56.0	70.0	57	54	52	53	50

(a) Annual Mean Limit Value = $40 \mu\text{gm}^{-3}$

(b) For 2015 the road length exceeding includes the road length associated with the traffic count point located adjacent to Aberdeen Union Street Roadside monitoring station (traffic count point 50866 on the A9013). See text for more detail. For years prior to 2015, model results only are presented.

Table 3: Modelled annual mean NO_x source apportionment at the location with the highest NO₂ concentration in 2015 in NO2_UK0038_Annual_1 (μgm⁻³) traffic count point 74313 on the A956; OS grid (m): 394510, 805770) (d).

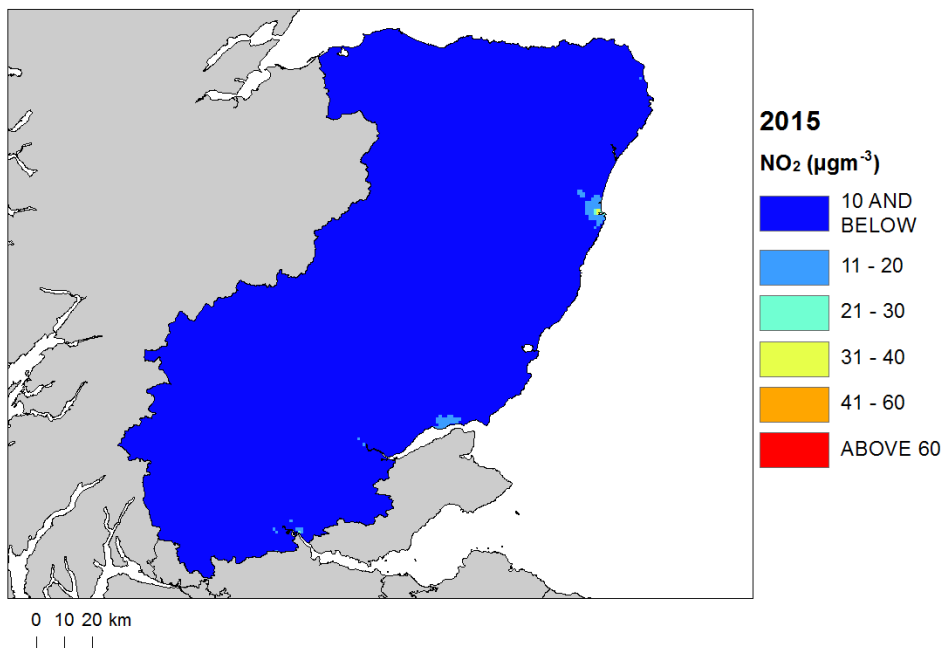
Spatial scale	Component	Concentration at highest road link (a)
Regional background sources NO _x (i.e. contributions from distant sources of > 30 km from the receptor).	Total	4.0
	From within the UK	1.3
	From transboundary sources (includes shipping and other EU member states)	2.7
Urban background sources NO _x (i.e. sources located within 0.3 - 30 km from the receptor).	Total	48.0
	From road traffic sources	11.8
	From industry (including heat and power generation)	0.8
	From agriculture	NA
	From commercial/residential sources	4.2
	From shipping	26.5
	From off road mobile machinery	4.0
	From natural sources	NA
	From transboundary sources	NA
From other urban background sources	0.7	
Local sources NO _x (i.e. contributions from sources < 0.3 km from the receptor).	Total	87.5
	From petrol cars	4.3
	From diesel cars	19.3
	From HGV rigid (b)	17.5
	From HGV articulated (b)	18.2
	From buses	13.4
	From petrol LGVs (c)	0.1
	From diesel LGVs (c)	14.6
From motorcycles	0.0	
From London taxis	0.0	
Total NO _x (i.e. regional background + urban background + local components)		139.6
Total NO ₂ (i.e. regional background + urban background + local components)		50

(a) Components are listed with NO_x concentration of NA when there is no source from this sector.

(b) HGV = heavy goods vehicle

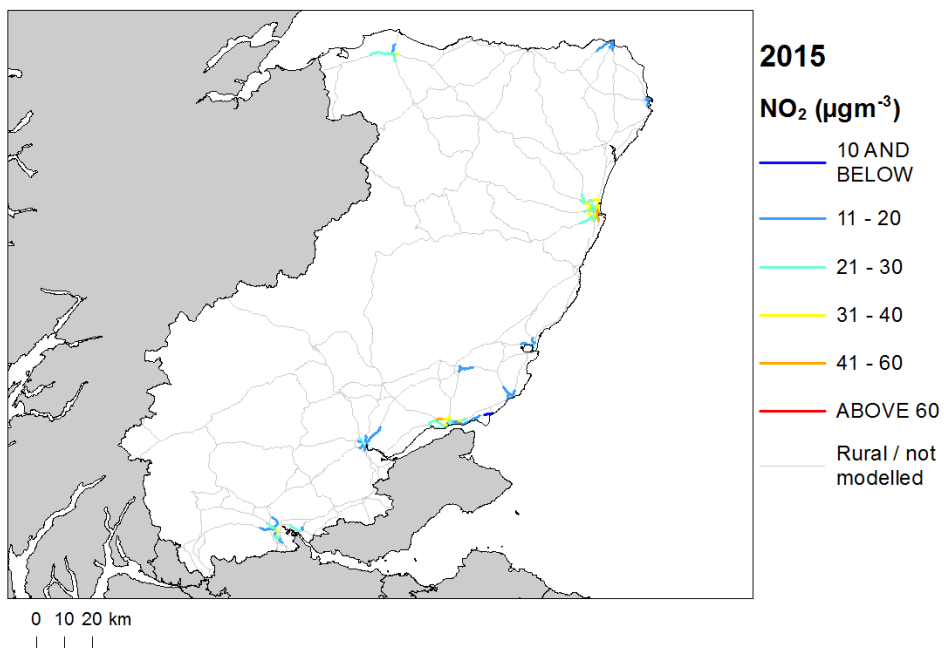
(c) LGV = light goods vehicle

Figure 4: Map of modelled background annual mean NO₂ concentrations 2015. Modelled exceedances of the annual limit value are shown in orange and red.



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

Figure 5: Map of roadside annual mean NO₂ concentrations 2015. Modelled exceedances of the annual limit value are shown in orange and red.³



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

³The NO₂ concentration presented for the traffic count point located adjacent to Aberdeen Union Street Roadside monitoring station (traffic count point 50866 on the A9013) is the measured annual mean NO₂ concentration at Aberdeen Union Street Roadside monitoring station. See text for more detail.

4 Measures

4.1 Introduction

This section gives details of measures that address exceedances of the NO₂ limit values within North East Scotland non-agglomeration zone. This includes both measures that have already been taken and measures for which there is a firm commitment that they will be taken.

Section 5 then explains the extent to which it has been possible to incorporate the impacts of these measures into the baseline modelling carried out for this assessment.

4.2 Source apportionment

It is important to understand which sources are responsible for causing the exceedance in order to most effectively tailor measures to address the NO₂ exceedance situation described in Section 3 above. This can be achieved by considering the source apportionment for the exceedance situation, also presented in Section 3. A summary of what the source apportionment shows and the implications for which measures would therefore be appropriate is given here.

Local road traffic was the dominant source in this exceedance location in the reference year. The largest contribution was from diesel cars, rigid HGVs, articulated HGVs, buses and diesel LGVs contributing at least 10% each of total NO_x on the road with the highest concentration. Diesel cars, articulated HGVs, rigid HGVs, diesel LGVs and on some roads buses were important sources on the primary roads with the highest concentrations. Diesel cars, articulated HGVs, rigid HGVs, diesel LGVs and shipping emissions were important sources on the trunk roads with the highest concentrations.

This indicates that appropriate measures should impact on local road traffic sources in this zone. Other measures to address the urban background sources may also be beneficial.

4.3 Measures

Measures potentially affecting NO₂ in this non-agglomeration zone have been taken and/or are planned at a range of administrative levels. These are:

- European Union
- National (i.e. England, Scotland, Wales, Northern Ireland or whole UK)
- Local (i.e. UK Local Authorities)

Details of European Union measures (e.g. Euro Standards, Fuel Quality Directives, Integrated Pollution Prevention and Control) can be found on the European Commission's website (http://ec.europa.eu/environment/air/index_en.htm). Details of national measures are given in the UK overview document.

Relevant Local Authority measures within this exceedance situation are listed in Table C.1 (see Annex C). Table C.1 lists measures which a local authority has carried out or is in the process of carrying out, plus additional measures which the local authority is committed to carrying out or is investigating with the expectation of carrying out in the future.

The measures that are being pursued in the zone contribute to improved air quality. The areas promote alternative modes of travel by promoting the restraint of using private cars and encouraging walking or cycling

to destinations. Walking has many benefits, e.g. it can improve health and wellbeing, reduce the impact of emissions on the environment and reduce levels of local congestion. Park and ride schemes are also in use.

Walking networks are largely formed by the extensive footway provision but also via a system of core paths which continues to be developed. Investment in both continues to improve accessibility via upgrading pedestrian crossings, dropped kerbs etc. Cycling networks are based on using the Green Circular and Core Paths as spines for additional routes termed Greenways for accessing major locations.

Some schools are involved in a school travel planning process which has resulted in reduced car use for school journeys.

4.4 Measures timescales

Timescales for national measures are given in the UK overview document.

Local Authorities report on progress with the implementation of their action plans annually and review action plan measures regularly. Information on local measures was collected in February/March 2015. Local authorities were asked to review and, where necessary, provide updates to measures in March/April 2017. Hence, any Local Authority action plans and measures adopted by Local Authorities after this time have not been included in this air quality plan, unless additional information was provided during the consultation process.

The reference year for this air quality plan is 2015. Where measures started and finished before 2015, then the improvement in air quality resulting from these measures will have already taken place before the reference year and the impact of these measures will have been included in the assessment where the measure has had an impact on the statistics used to compile the emission inventory. Many measures started before the reference year and will continue to have a beneficial impact on air quality well beyond the reference year. Measures with a start date before 2015 and an end date after 2015 may have an impact on concentrations in the reference year and a further impact in subsequent years. Where the Status column in Annex C is 'Implementation', this shows that this measure is already underway or that there is a commitment for this measure to go ahead. Where the Status is 'Planning', 'Preparation' or 'Other' the level of commitment is less clear and it is possible some of these measures may not go ahead.

5 Baseline Model Projections

5.1 Overview of model projections

Model projections for each year from 2017 to 2030, starting from the 2015 reference year described in Section 3, have been calculated in order to determine when compliance with the NO₂ limit values is likely to be achieved on the basis of EU, regional and local measures currently planned. Details of the methods used for the baseline emissions and projections modelling are provided in the UK technical report.

For national measures, it has not been possible to quantify the impact of all measures on emissions and ambient concentrations. The impact for all quantifiable measures has been included in the baseline projections.

The impacts of the individual Local Authority measures have not been explicitly included in the baseline model projections. However, measures may have been included implicitly if they have influenced the traffic counts for 2015 (used as a basis for the compilation of the emission inventory) or in the traffic activity projections to 2020 and beyond (used to calculate the emissions projections). It should be recognised that these measures will have a beneficial impact on air quality, even if it has not been possible to quantify this impact here.

5.2 Baseline projections: NO₂_UK0038_Annual_1

Table 4 presents summary results for the baseline model projections for each year from 2017 to 2030 for the NO₂_UK0038_Annual_1 exceedance situation. At locations where the measured NO₂ concentration in 2015 exceeded the annual mean limit value of 40 μgm^{-3} and the measured concentration was greater than the modelled concentration for the road link adjacent to the monitoring station, projections have been calculated using the measured concentration in 2015 as the starting point. The trend in concentration reductions shown by the modelled projection for the adjacent traffic count point has been used to project the 2015 measured concentrations forward. This is a precautionary approach to provide the best prediction of future concentrations and the corresponding year that compliance with the NO₂ limit values is projected to be achieved for the measured 2015 exceedance. For all other locations the modelled projections of NO₂ and NO_x concentrations start from the modelled concentration for the base year 2015. In the North East Scotland non-agglomeration zone the measured concentration at one monitoring station, Aberdeen Union Street Roadside (GB0923A, 46 μgm^{-3}), exceeds the annual mean limit value and is greater than the modelled concentration at the adjacent road link (traffic count point 50866 on the A9013) of 31 μgm^{-3} . At this location concentration projections start from the measured concentration of 46 μgm^{-3} .

Table 4 shows that the maximum modelled annual mean NO₂ concentration predicted for 2020 in this exceedance situation is 40 μgm^{-3} . Hence, the model results suggest that compliance with the NO₂ annual limit value is likely to be achieved by 2020 under baseline conditions.

Figure 6 and 7 presents maps of projected annual mean NO₂ concentrations at background and roadside locations respectively in 2020, the year at which compliance is achieved. For reference Figures 8 and 9 show maps of projected annual mean NO₂ concentrations in 2020, 2025 and 2030 for background and roadside locations respectively.

It should be noted that the baseline projections presented here include the impacts of some measures, where they can be quantified, that have already been or will be implemented.

Table 4: Annual mean NO₂ model results in NO₂_UK0038_Annual_1. (c, d)

	2015	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Road length exceeding (km)	8.7	4.0	1.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Background exceeding (km ²)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum modelled concentration NO ₂ (μgm ⁻³) (a)	50	46	44	42	40	38	36	34	33	32	31	30	29	29	28
Corresponding modelled concentration NO _x (μgm ⁻³) (b)	140	122	113	106	99	92	86	81	77	74	71	69	67	65	64

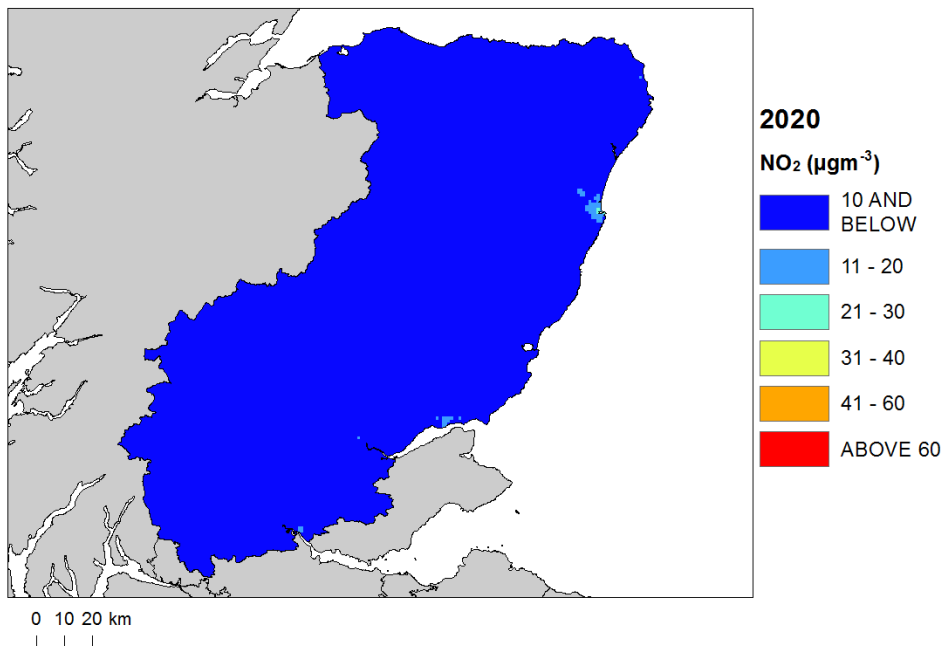
(a) Annual Mean Limit Value = 40 μgm⁻³

(b) NO_x is recorded here for comparison with the NO_x source apportionment graphs for 2015 presented in Annex B of this plan. Limit values for EU directive purposes are based on NO₂.

(c) Model results presented for 2015 include the measured concentration at Aberdeen Union Street Roadside (GB0923A) in place of the modelled concentration for traffic count point 50866 on the A9013 (the road link adjacent to Aberdeen Union Street Roadside monitoring station). Therefore, the road length exceeding may differ from that derived solely from modelling. See Section 3.2 for more information.

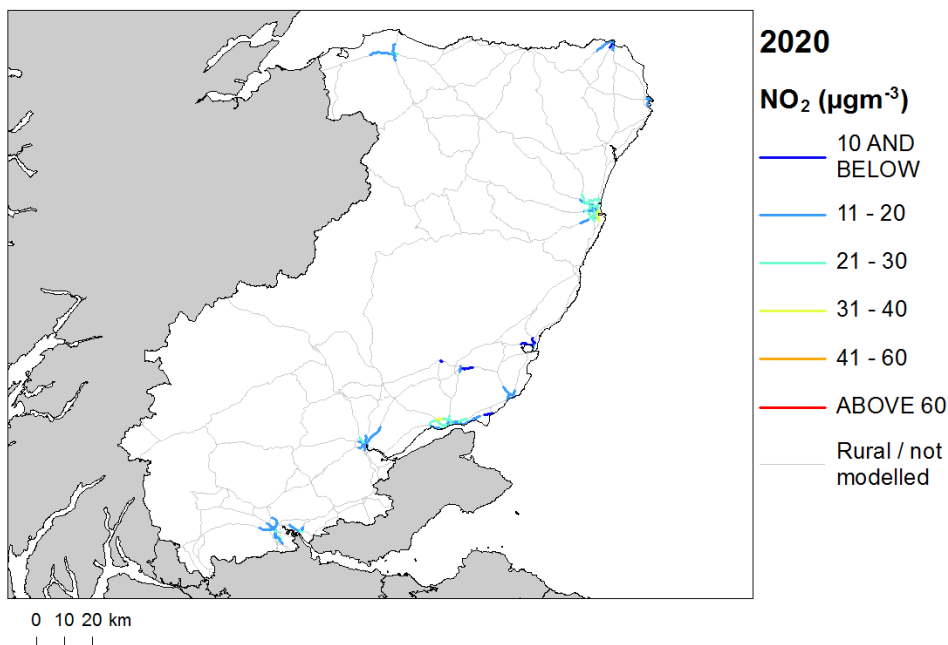
(d) Projected concentrations of NO₂ and NO_x at traffic count point 50866, the road link adjacent to Aberdeen Union Street Roadside(GB0923A) monitoring station, are projected from the 2015 measured annual mean concentrations of NO₂ and NO_x, respectively. See main text for more details.

Figure 6: Background baseline projections of annual mean NO₂ concentrations in 2020, the year at which compliance is achieved under baseline conditions. Modelled exceedances of the annual limit value are shown in orange and red.



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

Figure 7: Roadside baseline projections of annual mean NO₂ concentrations in 2020, the year at which compliance is achieved under baseline conditions. Modelled exceedances of the annual limit value are shown in orange and red.⁴



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

⁴The projected concentration of NO₂ at traffic count point 50866, the road link adjacent to Aberdeen Union Street Roadside (GB0923A) monitoring station, is projected from the 2015 measured annual mean concentration of NO₂. See main text for more details.

Figure 8: Background baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2015 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.

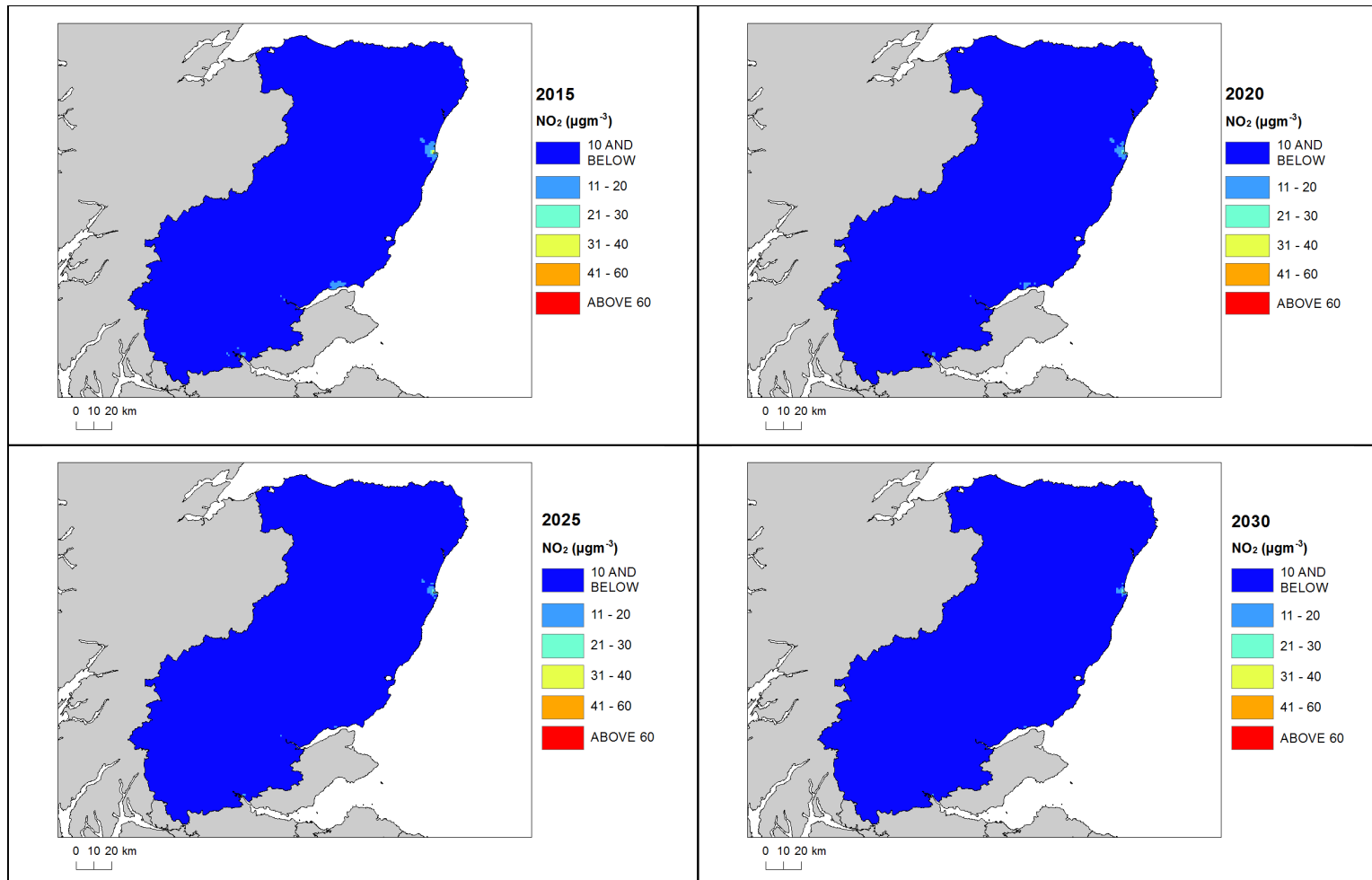
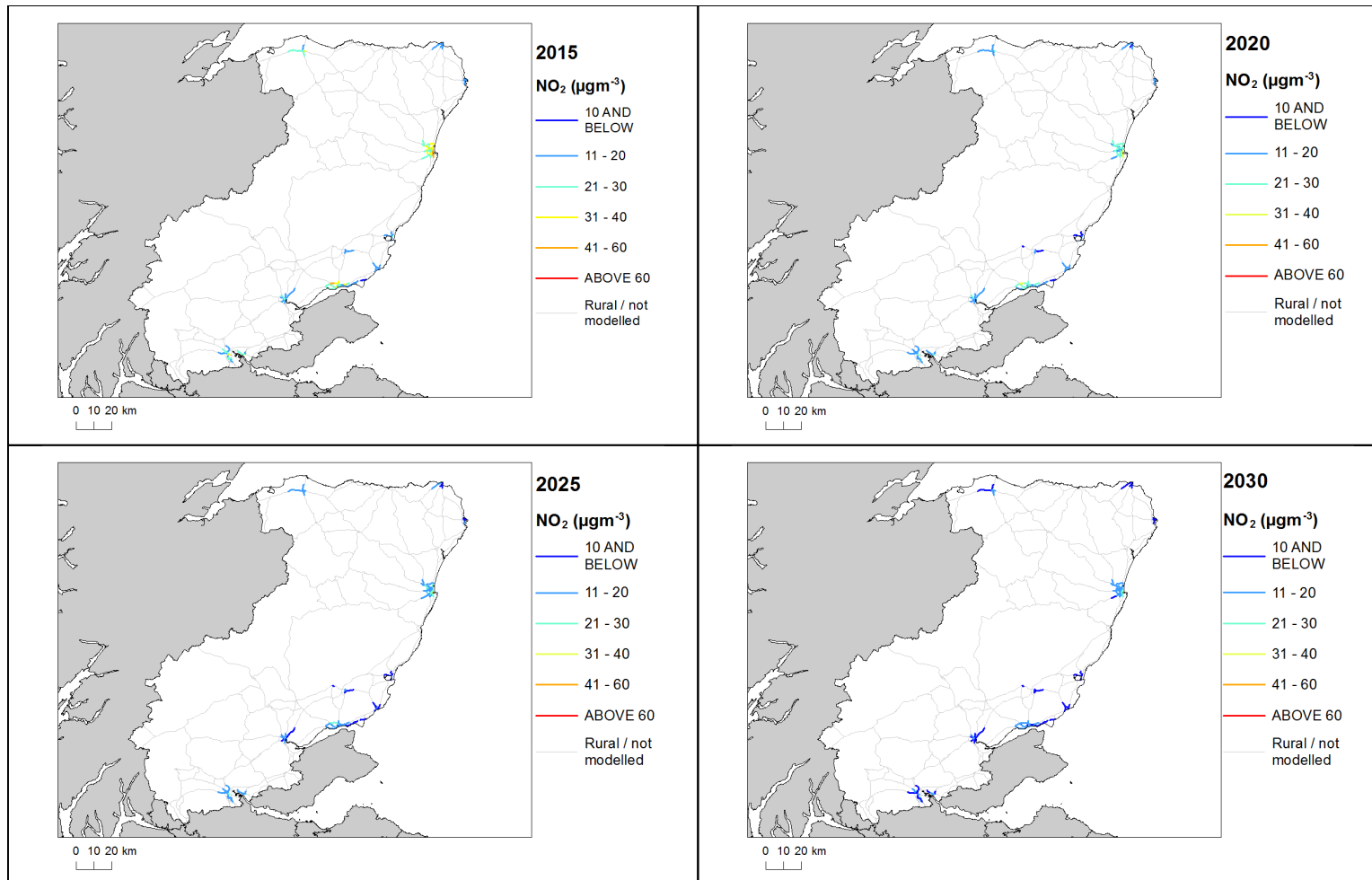


Figure 9: Roadside baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2015 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.⁵



© Crown copyright. All rights reserved Defra, License number 100022861 [2017]

⁵The projected concentration of NO₂ at traffic count point 50866, the road link adjacent to Aberdeen Union Street Roadside (GB0923A) monitoring station, is projected from the 2015 measured annual mean concentration of NO₂. See main text for more details.

Annexes

A References

1st Daughter Directive 1999/30/EC. Council Directive 1999/30/EC, of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air (The First Daughter Directive). From the Official Journal of the European Communities, 29.6.1999, En Series, L163/41.

Air Quality Directive 2008/50/EC. Council Directive 2008/50/EC, of 21 May 2008. On ambient air quality and cleaner air for Europe. From the Official Journal of the European Union, 11.6.2008, En Series, L152/1

Air Quality Expert Group (AQEG, 2004). Nitrogen Dioxide in the United Kingdom. <http://uk-air.defra.gov.uk/library/aqeg/publications>

CDR Central Data Repository. <http://cdr.eionet.europa.eu/>

Decision 2004/224/EC. Commission Decision of 20 February 2004 laying down arrangements for the submission of information on plans or programmes required under Council Directive 96/62/EC in relation to limit values for certain pollutants in ambient air. From the Official Journal of the European Union, 6.3.2004, En Series, L68/27

Decision 2004/461/EC. Commission Decision of 29 April 2004 laying down a questionnaire to be used for annual reporting on ambient air quality assessment under Council Directives 96/62/EC and 1999/30/EC and under Directives 2000/69/EC and 2002/3/EC of the European Parliament and of the Council. From the Official Journal of the European Union, 30.4.2004, En Series, L156/78

Decision 2011/850/EU. Commission Implementing Decision of 12 December 2011 laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air quality. From the Official Journal of the European Union, 17.12.2011, En Series, L335/86

IPR 2013. Guidance on the Commission Implementing Decision laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air (Decision 2011/850/EU). http://ec.europa.eu/environment/air/quality/legislation/pdf/IPR_guidance1.pdf

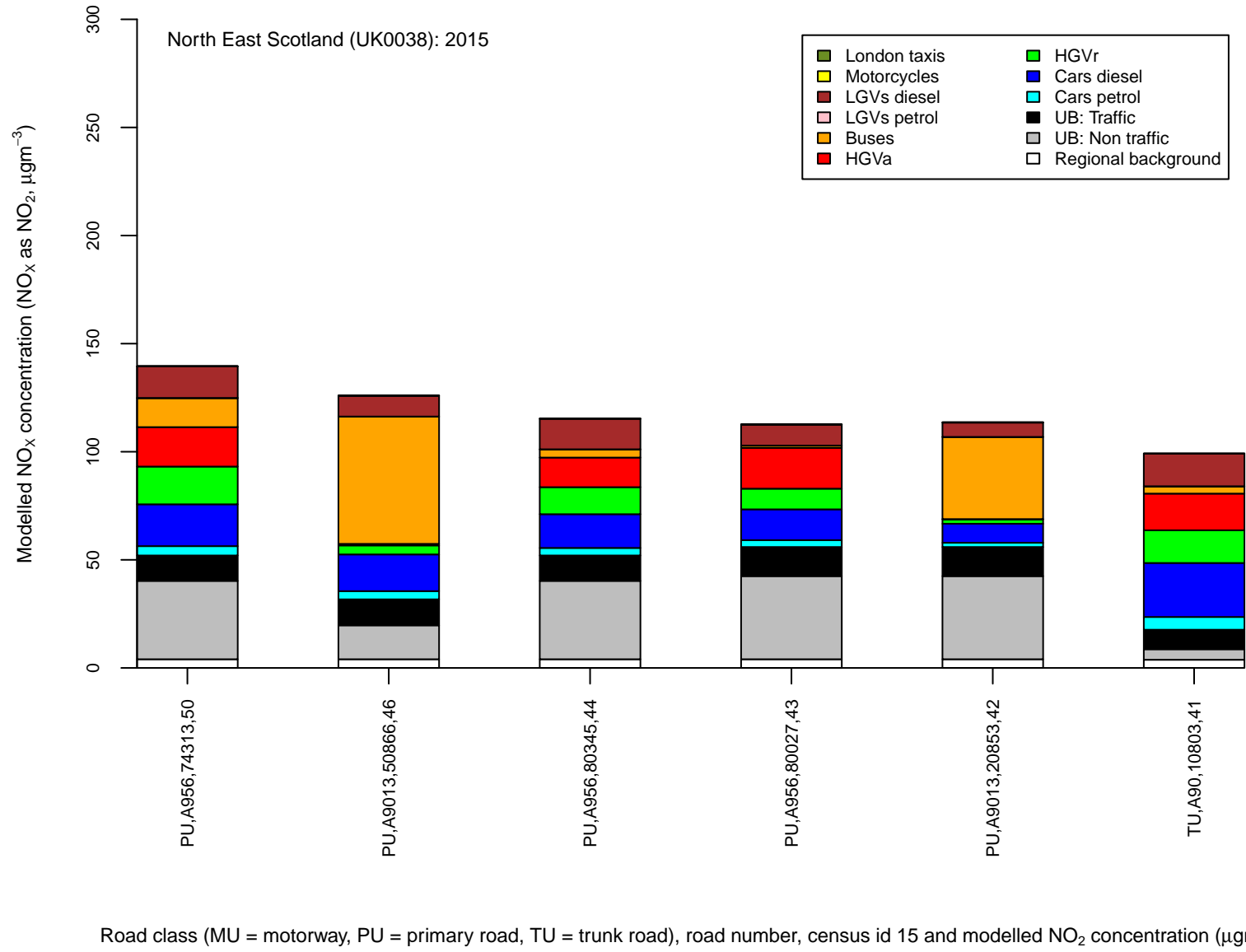
UK Air Quality Plan for tackling roadside nitrogen dioxide concentrations and the UK technical report are available at: <http://www.gov.uk/defra>.

Cleaner Air for Scotland – The Road to a Healthier Future. <http://www.gov.scot/Publications/2015/11/5671>

B Source apportionment graphs

Page left blank.

Figure B.1: Annual mean roadside NO_x source apportionment plots for all roads exceeding the annual mean NO₂ limit value in 2015.



C Tables of measures

Page left blank.

Table C.1 Relevant Local Authority measures within North East Scotland (UK0038)

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_1.1a	Increase bus use	Creation of additional Park & Choose sites at A96 and Schoolhill	Traffic planning and management: Improvement of public transport	Preparation	Start date: 2015 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: 253,753 passengers using Park & Ride in 2012/13 Target emissions reduction: Not yet identified
Aberdeen City Council_1.1b	Increase bus use	Delivery of standards and targets agreed by Bus Quality Partnership	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 11.3% employed adults not working from home, resident in Aberdeen City, bus to work 2012/13 Target emissions reduction: Not yet identified
Aberdeen City Council_1.1c	Increase bus use	Increase corridors covered by Bus Punctuality Improvement Partnerships (BPIP)	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 11.3% employed adults not working from home, resident in Aberdeen City, bus to work 2012/13 Target emissions reduction: Not yet identified
Aberdeen City Council_1.1d	Increase bus use	Integrated ticketing	Other measure: Other measure	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: Not yet identified
Aberdeen City Council_1.2a	Improve walking and cycling provision	Implementation of strategic and local cycle routes	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 3% employed adults not working from home, resident in Aberdeen City, cycle to work 2012/13 Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_1.2b	Improve walking and cycling provision	Increase cycle parking at schools, workplaces and in public areas	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 3% employed adults not working from home, resident in Aberdeen City, cycle to work 2012/13. 2.2% of pupils regularly cycle to school. Target emissions reduction: Not yet identified
Aberdeen City Council_1.2c	Improve walking and cycling provision	Implement Designing Streets for better overall walking and cycling environments	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 60% of adults walked at least quarter of a mile, at least one day in the previous 7 days Target emissions reduction: Not yet identified
Aberdeen City Council_1.2d	Improve walking and cycling provision	Integrated ticketing	Other measure: Other measure	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 60% of adults walked at least quarter of a mile, at least one day in the previous 7 days Target emissions reduction: Not yet identified
Aberdeen City Council_1.3a	Travel Plans	Encourage uptake of voluntary travel plans	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: [New indicator: The number of business travel plans in Aberdeen City] Target emissions reduction: Not yet identified
Aberdeen City Council_1.3b	Travel Plans	Ensure Travel Plans are requested as part of Planning process	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: [New indicator: Percentage compliance for developments over a certain size to have Travel Plans (as per Transport & Accessibility Guidance)] Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_1.3c	Travel Plans	Encourage uptake of school travel plans	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 5 schools in Aberdeen have a Travel Plan (2013). Target emissions reduction: Not yet identified
Aberdeen City Council_1.3d	Travel Plans	Continue to implement the Council's Travel Plan	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 57.4% of Council staff use sustainable modes to travel to work (CTP Survey 2014) Target emissions reduction: Not yet identified
Aberdeen City Council_1.4a	Improve public awareness of air quality issues	Air quality messages on Variable Message Signs	Public information and Education: Other mechanisms	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Number of events led by ACC Target emissions reduction: Not yet identified
Aberdeen City Council_1.4b	Improve public awareness of air quality issues	Improvements to air quality pages on Aberdeen City Council website	Public information and Education: Other mechanisms	Other	Start date: 2015 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: Number of events led by ACC Target emissions reduction: Not yet identified
Aberdeen City Council_1.4c	Improve public awareness of air quality issues	Text services	Public information and Education: Other mechanisms	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: Number of events led by ACC Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_1.4d	Improve public awareness of air quality issues	Undertake air quality and sustainable travel events	Public information and Education: Other mechanisms	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Number of events led by ACC Target emissions reduction: Not yet identified
Aberdeen City Council_1.5a	Car Clubs/ Car Pooling	Expand cars and locations in Car Club	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 419 Council staff members (Sept 2014) Target emissions reduction: Not yet identified
Aberdeen City Council_1.5b	Car Clubs/ Car Pooling	Undertake promotional campaigns with the public and businesses/ organisations	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 326 private members (Oct 2014) Target emissions reduction: Not yet identified
Aberdeen City Council_1.5c	Car Clubs/ Car Pooling	Continuation of car sharing scheme	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 2,486 car share scheme members (2013) Target emissions reduction: Not yet identified
Aberdeen City Council_1.6a	Rail Improvements	Continue to work with Nestrans and Transport Scotland/ Network Rail to deliver local rail improvements	Traffic planning and management: Improvement of public transport	Planning	Start date: 2014 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: 8 railway stations in North East in 2013 Target emissions reduction: Not yet identified
Aberdeen City Council_1.6b	Rail Improvements	Continue to work with Nestrans and Transport Scotland/ Network Rail to deliver local rail improvements	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 4,097,970 passengers per year (2012/13) Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_1.7a	Rail freight	Several supermarkets utilising rail freight rather than road	Traffic planning and management: Freight transport measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 166 thousand tonnes carried to or from the region by rail freight per year (2013) Target emissions reduction: Not yet identified
Aberdeen City Council_2.1a	Green Vehicle procurement and fuel	Improve Council fleet	Public procurement: Other measure	Preparation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 1% green vehicles in Council fleet as a proportion of total vehicles - 9/500 vehicles (2014) Target emissions reduction: Not yet identified
Aberdeen City Council_2.1b	Green Vehicle procurement and fuel	Work with bus operators to deliver the Bus Quality Partnership including ensuring buses operated are EURO IV or better by 2015.	Public procurement: Other measure	Implementation	Start date: 2012 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Aberdeen City Fleet - 83% Euro V; 17% Euro III. First Aberdeen - 35% Euro IV or better. Stagecoach - 53% Euro IV or better. Target emissions reduction: Not yet identified
Aberdeen City Council_2.1c	Green Vehicle procurement and fuel	Install electric charging points	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 39 Council installed electric charge points (Oct 2014) Target emissions reduction: Not yet identified
Aberdeen City Council_2.2a	Emissions testing and idling enforcement	Undertake roadside emissions testing	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 151 vehicles tested in 2012 (143 passed) Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_2.2b	Emissions testing and idling enforcement	Idling vehicles	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: 151 vehicles tested in 2012 (143 passed) Target emissions reduction: Not yet identified
Aberdeen City Council_2.3a	Taxis	Non-idling signage	Traffic planning and management: Other measure	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: [New Indicator: Explore classification of taxi vehicle fleet - % clean taxi fleet] Target emissions reduction: Not yet identified
Aberdeen City Council_2.3b	Taxis	Licensing improvements for vehicle inspections and emission restrictions	Permit systems and economic instruments: Introduction/increase of environment taxes	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: [New Indicator: Explore classification of taxi vehicle fleet - % clean taxi fleet] Target emissions reduction: Not yet identified
Aberdeen City Council_2.3c	Low Emission Zone	To investigate potential for a Low Emission Zone in the City Centre	Traffic planning and management: Low emission zones	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Detailed consideration of a Low Emission Zone Target emissions reduction: Not yet identified
Aberdeen City Council_3.1a	Pedestrianisation	Pedestrianise areas of the City Centre	Traffic planning and management: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Creation of a city centre pedestrianised area Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_3.1b	Road Building/ Junction alterations	Aberdeen Western Peripheral Route	Traffic planning and management: Other measure	Preparation	Start date: 2015 Expected end date: 2018 Spatial scale: Whole town or city Source affected: Transport Indicator: AWPR operational by 2018 with LIB Schemes implemented Target emissions reduction: Not yet identified
Aberdeen City Council_3.1c	Road Building/ Junction alterations	Haudagain roundabout	Traffic planning and management: Other measure	Preparation	Start date: 2014 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: AWPR operational by 2018 with LIB Schemes implemented Target emissions reduction: Not yet identified
Aberdeen City Council_4.1	Intelligent Transport Systems	Increase ITS provision	Public information and Education: Other mechanisms	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: An integrated ITS with Real Time Information informing members of the public on traffic and air quality issues Target emissions reduction: Not yet identified
Aberdeen City Council_4.2	High Occupancy Vehicle Lane	To install a HOV Lane on Stonehaven Road	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: HOV/ Car Sharing Lane Target emissions reduction: Not yet identified
Aberdeen City Council_4.3a	Freight and commercial vehicle access	HGV Priority Measures	Traffic planning and management: Freight transport measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: An integrated strategy for HGVs/ Freight in the City Target emissions reduction: Not yet identified
Aberdeen City Council_4.3b	Freight and commercial vehicle access	City Centre Commercial Delivery Strategy	Traffic planning and management: Freight transport measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: An integrated strategy for HGVs/ Freight in the City Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_4.3c	Freight and commercial vehicle access	Freight Consolidation Centre	Traffic planning and management: Freight transport measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: An integrated strategy for HGVs/ Freight in the City Target emissions reduction: Not yet identified
Aberdeen City Council_5.1a	Produce Supplementary Planning Guidance	Construction Code of Practice	Other measure: Other measure	Planning	Start date: 2012 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: [New Indicator: Annual monetary contributions towards air quality/ sustainable transport measures in AQMAs] Target emissions reduction: Not yet identified
Aberdeen City Council_5.1b	Produce Supplementary Planning Guidance	Improve Development Management	Other measure: Other measure	Planning	Start date: 2014 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: [New Indicator: Annual monetary contributions towards air quality/ sustainable transport measures in AQMAs] Target emissions reduction: Not yet identified
Aberdeen City Council_5.1c	Produce Supplementary Planning Guidance	Targeted Section 75 monetary contributions towards delivery of mitigation measures	Other measure: Other measure	Planning	Start date: 2014 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: [New Indicator: Annual monetary contributions towards air quality/ sustainable transport measures in AQMAs] Target emissions reduction: Not yet identified
Aberdeen City Council_5.2	Integration of AQAP with the Local Transport Strategy (LTS) and Regional Transport Strategy (RTS)	Ensure air quality issues are referenced in LTS and RTS	Other measure: Other measure	Planning	Start date: 2015 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: Updated/ Refreshed LTS and RTS Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_5.3	Integration of AQAP with HTAP	Highlight the health impacts of poor air quality	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: HTAP containing air quality actions Target emissions reduction: Not yet identified
Aberdeen City Council_5.4	Integration of AQAP with HTAP	Highlight the health impacts of poor air quality	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: HTAP containing air quality actions Target emissions reduction: Not yet identified
Aberdeen City Council_5.5a	Car Parking Policies	Include Emission Based Parking Charge (EBPC) Assessment as part of 2013 Parking Charges Review	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: [New indicator: Number of vehicles applying for reduced parking charges/ proportion of low emission permits] Target emissions reduction: Not yet identified
Aberdeen City Council_5.5b	Car Parking Policies	Limit car parking for new developments	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: To monitor the price of car parking in Aberdeen City Centre relative to bus fares Target emissions reduction: Not yet identified
Aberdeen City Council_5.5c	Car Parking Policies	Development of Local and Regional Car Parking Policies	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Local policies compliant with regional policies Target emissions reduction: Not yet identified

Measure code	Description	Focus	Classification	Status	Other information
Aberdeen City Council_5.5d	Integration of AQAP with Noise Action Plan (NAP)	Implementation of policies that benefit both air quality and noise	Other measure: Other measure	Planning	Start date: 2014 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: NAP compliance Target emissions reduction: Not yet identified
Aberdeen City Council_6.1	Control Biomass Installations	Enforce cleaner biomass boiler installation	Traffic planning and management: Other measure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Industry including heat and power production Indicator: Compliance with policy Target emissions reduction: Not yet identified
Aberdeen City Council_6.2	Industry Permitting	New and amended Integrated Pollution Control (IPC) applications reviewed and liaison with SEPA	Permit systems and economic instruments: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Industry including heat and power production Indicator: Compliance with policy Target emissions reduction: Not yet identified
Aberdeen City Council_6.3	Tree Planting	Plant tree species with a positive air quality impact, and avoid tree species with a negative air quality impact	Traffic planning and management: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Other, please specify Indicator: Compliance with policy Target emissions reduction: Not yet identified
Aberdeen City Council_6.4	Shipping	Work with the Harbour Board	Traffic planning and management: Freight transport measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Shipping Indicator: Work with Aberdeen Harbour to reduce emissions from shipping, harbour activities and vehicles Target emissions reduction: Not yet identified
Dundee City Council_1a	TRAFFIC MEASURES Measure M1: Existing Road Infrastructure Improvements	City Centre Improvements - Union St	Traffic planning and management: Other measure	Other	Start date: 2010 Expected end date: 2011 Spatial scale: Local Source affected: Transport Indicator: Implementation of improvements Target emissions reduction: >1ug/m3

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_1b	TRAFFIC MEASURES Measure M1: Existing Road Infrastructure Improvements	NW Arterial Route Improvement - Lochee Rd	Traffic planning and management: Other measure	Other	Start date: 2012 Expected end date: 2012 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated
Dundee City Council_1c	TRAFFIC MEASURES Measure M1: Existing Road Infrastructure Improvements	City Centre Improvements - Meadowside	Traffic planning and management: Other measure	Implementation	Start date: 2013 Expected end date: 2015 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated
Dundee City Council_1d	TRAFFIC MEASURES Measure M1: Existing Road Infrastructure Improvements	Arterial Route Improvements - Stannergate	Traffic planning and management: Other measure	Evaluation	Start date: 2014 Expected end date: 2015 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated
Dundee City Council_1e	TRAFFIC MEASURES Measure M1: Existing Road Infrastructure Improvements	City Centre Improvements - Seagate / St. Andrews Street.	Traffic planning and management: Other measure	Evaluation	Start date: 2014 Expected end date: 2015 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated
Dundee City Council_2a	Measure M2: DCC will enhance the Urban Traffic Management and Control (UTMC) system to reduce congestion	Real-time traffic monitoring. Improved control regime to smooth out peak traffic.	Traffic planning and management: Other measure	Other	Start date: 2013 Expected end date: 2013 Spatial scale: Local Source affected: Transport Indicator: 10% reduction in congestion (journey times) in targeted areas during peak times before and after implementation of measure. Annual review of impact Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_2b	Measure M2: DCC will enhance the Urban Traffic Management and Control (UTMC) system to reduce congestion	TACTRAN Capital Grant funding for expanded automation of journey time monitoring to allow activation of traffic management systems to alleviate congestion.	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2015 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_2c	Measure M2: DCC will enhance the Urban Traffic Management and Control (UTMC) system to reduce congestion	Improve traffic flow/ management strategies in Lochee Rd-introduce MOTES	Traffic planning and management: Other measure	Other	Start date: 2013 Expected end date: 2013 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated
Dundee City Council_2d	Measure M2: DCC will enhance the Urban Traffic Management and Control (UTMC) system to reduce congestion	Paramic/AIRE modelling of key junctions Kingsway/Forfar Road& Lochee Road Corridor to test option improvements	Traffic planning and management: Other measure	Evaluation	Start date: 2013 Expected end date: 2013 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Not estimated
Dundee City Council_3a	Measure M3: DCC to identify partnership and funding to continue benefits of Smarter Choices/Smarter Places: Dundee Travel Active Programme	Identify and implement wider partnership to continue programme. Identify funding	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2013 Expected end date: 2013 Spatial scale: Local Source affected: Transport Indicator: Increase % of people who walk and cycle to work in Dundee. Identify funding for education Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_3b	Measure M3: DCC to identify partnership and funding to continue benefits of Smarter Choices/Smarter Places: Dundee Travel Active Programme	Behavioural Change Primary School programme to promote sustainable travel options in all primary schools in Dundee. Funding sought for FY 2014/15 to extend programme to P5 pupils over two academic years	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2014 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_3c	Measure M3: DCC to identify partnership and funding to continue benefits of Smarter Choices/Smarter Places: Dundee Travel Active Programme	3 "Doctor Bike" Safety Events planned for the City Square	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2013 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_4a	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	Statutory Bus Quality Partnership. Voluntary Bus Quality Partnership	Traffic planning and management: Improvement of public transport	Other	Start date: 2011 Expected end date: 2020 Spatial scale: Local Source affected: Transport Indicator: Identification of new corridors that directly benefit air quality. Target emissions reduction: 0.5 to 1ug/m3

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_4b	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	Fleet Renewal - Emissions Improvements	Public procurement: Cleaner vehicle transport services	Other	Start date: 2011 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: Fleet age, Euro class, fuel type Target emissions reduction: 0.5 to 1ug/m3
Dundee City Council_4c	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	Lobby Scottish Government for fuel duty rebates for low carbon fleet	Public procurement: Cleaner vehicle transport services	Other	Start date: 2014 Expected end date: 2014 Spatial scale: National Source affected: Transport Indicator: Lobby Scottish Government for fuel duty rebates for low carbon fleet Target emissions reduction: N/A
Dundee City Council_4d	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	National Express Dundee will introduce nine Diesel Electric Hybrid buses into their fleet in April / May 2013 as per Green Bus Fund 2 bid success	Public procurement: Cleaner vehicle transport services	Other	Start date: 2012 Expected end date: 2013 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_4e	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	ECO Stars Dundee Fleet Management Recognition Scheme being introduced	Other measure: Other measure	Implementation	Start date: 2013 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_4f	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	Tackling Idling Bus Emissions	Traffic planning and management: Other measure	Other	Start date: 2014 Expected end date: 2012 Spatial scale: Local Source affected: Transport Indicator: Traffic Regulation Conditions within the city centre. 'No-idling' signage on bus routes. Driver Training/ Awareness Raising Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_4g	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	Low Emission Zones (LEZ) for buses	Traffic planning and management: Low emission zones	Other	Start date: 2014 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: Investigate the Traffic Regulation Conditions for LEZ in City Centre. Route choice for clean buses see Park & Ride facilities Target emissions reduction: >1ug/m3

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_4h	Measure M4: DCC will introduce measures to improve bus services and reduce emissions	Bus Emission Modelling being undertaken to test likely improvements associated with various scenarios including possible LEZ for buses by 2017	Traffic planning and management: Low emission zones	Evaluation	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_5	Measure M5: DCC will explore provision of Park and Ride facilities that do not have adverse impact on air quality	Provision of Park and Ride (P&R) facilities	Traffic planning and management: Improvement of public transport	Evaluation	Start date: 2014 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: Report on identification and prioritisation of P&R facilities Implementation of scheme Passenger numbers Target emissions reduction: 0.5 to 1ug/m3
Dundee City Council_6a	Measure M6: DCC will introduce measures to reduce emissions from Heavy Goods Vehicles	Perth & Dundee Retail Freight Consolidation Centre	Traffic planning and management: Freight transport measure	Other	Start date: 2011 Expected end date: 2012 Spatial scale: Local Source affected: Transport Indicator: Implementation of scheme Vehicle fleet in the AQMA Study for the alternate system of retail freight Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_6b	Freight Quality Partnership (FQP)	DCC City Development Department Transportation Division)& TACTRAN	Traffic planning and management: Freight transport measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Implementation of partnership Changes in hourly profile of HGVs in AQMA Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_6c	Freight Quality Partnership (FQP)	A freight routing planning tool will be launched by TACTRAN which should encourage HGVs to follow appropriate routes	Traffic planning and management: Freight transport measure	Other	Start date: 2013 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Transport Indicator: Target emissions reduction:
Dundee City Council_6d	Freight Quality Partnership (FQP)	Dundee is participating in a pan European project (ENCLOSE) investigating city logistics with carbon and emission reduction as important factors under investigation	Traffic planning and management: Freight transport measure	Implementation	Start date: 2014 Expected end date: 2017 Spatial scale: Whole town or city Source affected: Transport Indicator: Target emissions reduction:

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_6e	Freight Quality Partnership (FQP)	ECO Stars Dundee Fleet Management Recognition Scheme being introduced	Other measure: Other measure	Implementation	Start date: 2013 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Target emissions reduction:
Dundee City Council_7a	Measure M7: DCC will seek improvements in emissions standards, including NO2 and PM10 for the council fleet and public service vehicles	Development of Green Procurement Strategy. To set target for Euro category/fuel type.	Public procurement: New vehicles, including low emission vehicles	Implementation	Start date: 2011 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Approval of Strategy (Asset Management Plan). Average age fleet and Euro category, fuel type Target emissions reduction: Small
Dundee City Council_7b	Measure M7: DCC will seek improvements in emissions standards, including NO2 and PM10 for the council fleet and public service vehicles	The development of an Asset Management Plan which will incorporate environmental issues as part of the replacement criteria	Public procurement: New vehicles, including low emission vehicles	Implementation	Start date: 2013 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_7c	Measure M7: DCC will seek improvements in emissions standards, including NO2 and PM10 for the council fleet and public service vehicles	Initial discussions for 2013/14 vehicle/plant replacement programme has identified improved emissions as a high priority	Public procurement: New vehicles, including low emission vehicles	Implementation	Start date: 2013 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_7d	Measure M7: DCC will seek improvements in emissions standards, including NO2 and PM10 for the council fleet and public service vehicles	Participation in ECO Stars Dundee-Fleet Management Recognition Scheme	Other measure: Other measure	Implementation	Start date: 2013 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_8a	Measure M8: DCC in consultation with the Taxi Liaison Group will explore means of reducing emissions from taxis and private car hire vehicles in AQMA	Enforce No idling for taxis. Increase cleaner taxis	Public procurement: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Traffic Regulation Conditions for 'No Idling' of taxis. Explore the potential of introducing Licensing Conditions for minimum taxi Euro category for certain classes of vehicles. Provide 'No Idling' street signage. Monitoring for idling in place Target emissions reduction: 0.5 to 1ug/m3

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_8b	Measure M8: DCC in consultation with the Taxi Liaison Group will explore means of reducing emissions from taxis and private car hire vehicles in AQMA	As part of Air Quality Low Emission Charter, continue to investigate opportunities for: Traffic Regulation Conditions for 'No Idling' of taxis;	Traffic planning and management: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Target emissions reduction:
Dundee City Council_8c	Measure M8: DCC in consultation with the Taxi Liaison Group will explore means of reducing emissions from taxis and private car hire vehicles in AQMA	Explore the potential of introducing Licensing Conditions for minimum taxi Euro category for certain classes of vehicles;	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Target emissions reduction:
Dundee City Council_8d	Measure M8: DCC in consultation with the Taxi Liaison Group will explore means of reducing emissions from taxis and private car hire vehicles in AQMA	Provide 'No Idling' street signage; Monitoring for idling.	Traffic planning and management: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Target emissions reduction:
Dundee City Council_8e	Measure M8: DCC in consultation with the Taxi Liaison Group will explore means of reducing emissions from taxis and private car hire vehicles in AQMA	DCC also looking at collaborative work with taxi operators in developing an Electric Vehicle trial for taxis in Dundee	Public procurement: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Target emissions reduction:
Dundee City Council_8f	Measure M8: DCC in consultation with the Taxi Liaison Group will explore means of reducing emissions from taxis and private car hire vehicles in AQMA	Seek funding to allow expansion of ECOSTARS programme to include taxi operators	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_9a	Measure M9: DCC will investigate to initiate a Roadside Emission Testing (RET) scheme inside the AQMA and routes leading to AQMA	To investigate into the establishment of a programme of RET in the AQMA	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Approval/non-approval of RET scheme. Traffic Regulation Conditions if necessary. Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_9b	Measure M9: DCC will investigate to initiate a Roadside Emission Testing (RET) scheme inside the AQMA and routes leading to AQMA	To seek funding to undertake feasibility study of introduction of RET	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_10	POLICY & PARTNERSHIP WORKING MEASURES Measure M10: DCC will ensure local air quality is fully integrated into the Local Development Plan (LDP) process and development scenarios are appropriately assessed with respect to the potential impacts on air quality	Provide AQ policy within Local Development Plan with commitment to improve air quality. Produce air quality Supplementary Planning Guidance (SPG)	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: Adoption of Local Development Plan. Adoption of Air Quality SPG. Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_11	Measure M11: DCC will ensure effective co-ordination between climate change and air quality strategies and action plan measures	Strategy to be developed to improve co-ordination between climate change and air quality strategies and action plan measures	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2014 Spatial scale: Local Source affected: Other, please specify Indicator: Implementation of co-ordination strategy. Reciprocal attendance of air quality and climate change working groups/steering committees Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_12	Measure M12: DCC will continue its active involvement and support of TACTRAN	Regularly attend meetings. Provide feedback. Provide necessary support.	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Number of TACTRAN policies and proposals implemented Target emissions reduction: N/a
Dundee City Council_13	LEADING BY EXAMPLE MEASURES Measure M13: DCC will promote the uptake and use of cleaner and/or alternative fuels where possible for transport, DCC will explore the development of electric charging point infrastructure	Determine strategy/advise note and annually review content. Install Electric Charging Facilities in Car Parks	Public procurement: Other measure	Implementation	Start date: 2012 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: List of any promotion campaigns planned / implemented. Number / proportion of cleaner vehicles within fleets or clean fuels infrastructure in each financial year. Number of electric charging points installed. Target emissions reduction: Small

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_15a	Measure M15: DCC will improve the Council's vehicle fuel consumption efficiency by better management of fleet activities	Develop fleet management plan to improve fuel efficiency. Investigate fleet activities in relation to pollution hotspots e.g. waste management fleet routes.	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: Implementation of smarter driver programme. Preparation / Implementation of Fleet management plan. 10% reduction by 2013 for staff business travel and Corporate Fleet. Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_15b	Measure M15: DCC will improve the Council's vehicle fuel consumption efficiency by better management of fleet activities	Analysis of the information provided by the telematics system in relation to idling time etc.	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_16	Measure M16: DCC will promote options for better travel planning amongst Dundee City Council employees	Review DCC Travel Plan. DCC to investigate use of annual survey on how/what modes of transport employees use to travel to work	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: Implementation of DCC Travel Plan & review of progress with targets. 10% reduction by 2013 in staff business travel. % DCC employees walking/cycling to work. Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_17	Measure M17: DCC will continue to promote and encourage their employees to consider the use of bicycles in their daily duties by providing cycle usage mileage	Continue to investigate and develop the use of various incentive schemes. Develop cycling strategies. DCC to investigate use of annual survey on how/what modes of transport employees use to travel to work.	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: % DCC employees walking/cycling to work. Incorporate cycling measures within DCC Travel Plan in line with the new DCC Cycling Strategy to be developed Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_18a	Measure M18: DCC will assess the Council's energy needs, make recommendations and implement reductions of carbon emissions which result in corresponding reductions of NO2 and PM10.	DCC to implement annual energy reduction action plan	Other measure: Other measure	Other	Start date: 2011 Expected end date: 2013 Spatial scale: Local Source affected: Other, please specify Indicator: 10% reduction by 2013 Target emissions reduction: 0 to 0.5 ug/m3

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_18b	Measure M18: DCC will assess the Council's energy needs, make recommendations and implement reductions of carbon emissions which result in corresponding reductions of NO2 and PM10.	New annual aspirational reduction target of 5% until 2020	Other measure: Other measure	Implementation	Start date: 2013 Expected end date: 2020 Spatial scale: Local Source affected: Other, please specify Indicator: N/A Target emissions reduction: N/A
Dundee City Council_19	EDUCATION & COMMUNITY MEASURES Measure M19: DCC to promote and support localised energy generation that doesn't compromise Air Quality in private households	Determine strategy/advise note and annually review content	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2012 Spatial scale: Whole town or city Source affected: Commercial and residential sources Indicator: List of any promotion campaigns planned/ implemented Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_20a	Measure M20: DCC will provide the public with relevant air quality information.	Investigating the potential for uptake of an air pollution information system, such as Air Alert. Improvements to AQ website information. Make up to date air quality information available to the public through Councils digital website.	Public information and Education: Internet	Other	Start date: 2012 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: Investigate funding sources. Implement Air Alert or similar service. Improved rating of website in peer review. Make AQ information available through Council's website. Real Time Travel Information. Target emissions reduction: Small
Dundee City Council_20b	Measure M20: DCC will provide the public with relevant air quality information.	Complete improvements to AQ website	Public information and Education: Internet	Other	Start date: 2012 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: Target emissions reduction:
Dundee City Council_20c	Measure M20: DCC will provide the public with relevant air quality information.	Develop Database to enable DCC staff to better manage large volume of AQ data and make it more readily available to stakeholders	Public information and Education: Internet	Planning	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Other, please specify Indicator: Target emissions reduction:

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_21a	Measure M21: DCC will continue its work to increase uptake and implementation of School and Workplace Travel Plans, particularly where likely to impact on the AQMA	DCC to ensure all relevant commercial planning applications have travel plan conditions applied in accordance with current best practice. DCC to produce Travel Plan Strategy which: (1) Details procedure for tracking & possible requirement for enforcement of planning conditions requiring travel plans, (2) Details procedure for Travel Plan Information storage at DCC.	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2013 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: Develop Business Case for Travel Co-ordinator & identify potential funding streams. Number of new travel plans (need to show in terms of walking cycling - % of journeys saved). Identify & report on any Air Quality related Travel Plan targets from travel plan strategy and any relevant Travel Planning Team targets. Promotion of Travel Plan initiatives e.g. Sustrans' Travel Smart. Implement & regularly review Travel Plan Strategy. Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_21b	Measure M21: DCC will continue its work to increase uptake and implementation of School and Workplace Travel Plans, particularly where likely to impact on the AQMA	See Measure 3- Behavioural Change Primary School programme to promote sustainable travel options in all primary schools in Dundee	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2014 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_22a	Measure M22: DCC will continue working in partnerships with TACTRAN and local active travel networks to ensure that walking and cycling initiatives are promoted and supported in Dundee	Identify walking & cycling schemes (such as Park & Cycle). Identify walking & cycling promotional opportunities around Dundee City.	Traffic planning and management: Encouragement of shift of transport modes	Preparation	Start date: 2011 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: Number of walking and/or cycling initiatives in operation. Establish the use of cycle monitoring counts at key points on cycle routes Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_22b	Measure M22: DCC will continue working in partnerships with TACTRAN and local active travel networks to ensure that walking and cycling initiatives are promoted and supported in Dundee	Preliminary Works to achieve off-road cycle route around the Port of Dundee	Traffic planning and management: Encouragement of shift of transport modes	Preparation	Start date: 2013 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Dundee City Council_22c	Measure M22: DCC will continue working in partnerships with TACTRAN and local active travel networks to ensure that walking and cycling initiatives are promoted and supported in Dundee	Provide Pedestrian Bridge over the railway at Riverside Drive / Seabraes	Traffic planning and management: Encouragement of shift of transport modes	Preparation	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Dundee City Council_23a	Measure M23: DCC will continue to work with transport providers to support and promote increased uptake of public transport modes	Promote schemes such as the SQUID card including Dundee and surrounding towns. Introduce smart and integrated ticketing	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2011 Expected end date: 2012 Spatial scale: Whole town or city Source affected: Transport Indicator: Uptake schemes, Passenger numbers Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_23b	Measure M23: DCC will continue to work with transport providers to support and promote increased uptake of public transport modes	NEC SMART Ticketing to Go Live 2014	Traffic planning and management: Improvement of public transport	Other	Start date: 2011 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: Target emissions reduction: Start date: 2012 Expected end date: 2012 Spatial scale: Local Source affected: Other, please specify Indicator: Implementation of Annual Energy Efficiency Action Plan. Report reductions in energy use Target emissions reduction: 0 to 0.5 ug/m3
Dundee City Council_24	Measure M24: DCC will continue to work in partnership with other organisations to promote and implement energy efficiency measures in Dundee	To implement an Annual Action Plan of energy efficiency measures.	Other measure: Other measure	Other	Start date: 2011 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Commercial and residential sources Indicator: % uptake composting bins Target emissions reduction: Small
Dundee City Council_28	Measure M28: DCC will promote composting in a bid to reduce pollution from domestic bonfires	Reintroduce discount/promotion campaign for compost bins	Other measure: Other measure	Implementation	Start date: 2009 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: It is not possible at this stage to assign a quantitative indicator. We will report outputs of feasibility work/air quality assessments as they arise and update timescales as appropriate Target emissions reduction: High
Perth & Kinross Council_1	Cross Tay Link	New crossing of the Tay linking the A9 to the A94 north of Scone, including package of associate bus priority, cycle and pedestrian measures 'locking in the benefits' to Perth city centre	Traffic planning and management: Other measure	Planning	Start date: 2009 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: It is not possible at this stage to assign a quantitative indicator. We will report outputs of feasibility work/air quality assessments as they arise and update timescales as appropriate Target emissions reduction: High

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_2	Integrate AQ into Regional Transport Strategy	Ensure that this AQAP is integrated into the delivery of the Regional Transport Strategy	Traffic planning and management: Other measure	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: National Source affected: Transport Indicator: We will report annually on our meetings with Tactran, and provide a discussion as how the AQAP is influencing delivery of the RTS Target emissions reduction: Medium - High
Perth & Kinross Council_3	Integrate AQ into Local Transport Strategy	Ensure that this AQAP is integrated into the delivery of the Local Transport Strategy. A new strategy was published 2010 and AQ is one of the Strategy objectives	Other measure: Other measure	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: We will comment on specific air quality provisions contained in the LTS. Target emissions reduction: Medium - High
Perth & Kinross Council_4	Park & Ride	Operate existing Park & Ride Schemes and maintain high levels of usage. We will carry out intermittent surveys to assess vehicles using the sites	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Annual usage statistics. A calculation of avoided NOx/PM10 will be provided Annually Target emissions reduction: Medium - High
Perth & Kinross Council_5	Park & Ride	Investigate a new Park And Ride/Park and choose site at walnut Groove, Perth	Traffic planning and management: Improvement of public transport	Planning	Start date: 2009 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: We will report outputs of feasibility work/detailed design and air quality assessments Led by Tactran as they arise and update timescales as appropriate Target emissions reduction: High
Perth & Kinross Council_6	Park & Ride	Programme of improvements to existing Park And Ride sites (e.g. Better waiting areas, lighting etc.)	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Report of any improvements made, tied into occupancy rate Target emissions reduction: Small

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_7	Bus Quality Improvements	Bus Strategy and Quality Bus Partnerships. PKC - Work with Tactran, operators and other relevant stakeholders to create a bus strategy for the region. Support of these measures	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Shift to alternative modes- this will be monitored by Tactran as part of the evaluation process of their RTS Delivery Plan Target emissions reduction: Medium
Perth & Kinross Council_8	Bus Quality Improvements	Tactran work in partnership with Councils, bus operators and other relevant stakeholders to identify and deliver improvements to the quality and accessibility of vehicles, services and associated facilities across the Region, particularly maximising funding and grant opportunities in support of these	Traffic planning and management: Other measure	Other	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Perth & Kinross Council_9	Bus Quality Improvements	Ensure air quality is formally considered in future public transport procurement decisions(i.e. for subsidised public services, school buses, school taxis)	Other measure: Other measure	Other	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Outcome of any procurement decisions. As cleaner vehicles come on stream, an annual calculation of the avoided NOx and PM10 will be provided Target emissions reduction: Medium
Perth & Kinross Council_10	Freight Improvements	Establish a Tactran - wide Freight Quality Partnership, in liaison with freight interests and Councils drawing upon established guidance, to help deliver cost effective packages of freight related interventions across the region	Traffic planning and management: Freight transport measure	Evaluation	Start date: 2009 Expected end date: 2024 Spatial scale: Local Source affected: Transport Indicator: PKC will seek regular updates from Tactran on progress and report on these annually Target emissions reduction: High
Perth & Kinross Council_11	Freight Improvements	Development of a freight consolidation scheme or commercial delivery strategy	Traffic planning and management: Freight transport measure	Evaluation	Start date: 2009 Expected end date: 2015 Spatial scale: Local Source affected: Transport Indicator: Initially we will report on feasibility work as and when it is carried out. If developed we could use the number of vehicle km avoided to calculate emission savings Target emissions reduction: Medium - High

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_12	Travel Planning	PKC Staff Travel Plan; including encouraging Flexible working, car/lift sharing/ alternative modes, salary sacrifice bicycle scheme	Traffic planning and management: Encouragement of shift of transport modes	Other	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Activity data will be collected by survey to support the working of the PKC GTP. A base survey of staff travel habits will also be carried out. We will estimate vehicle km avoided in the AQMA and report emissions of NOx and PM10 Target emissions reduction: Medium
Perth & Kinross Council_13	Travel Planning	We will work with regional partners to further encourage development and employee use of Green Travel Plans in our large employers within Perth& Kinross	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: Activity data will be sought from the main employers as to the journeys avoided from their GTPs. If this is provided will estimate vehicle km avoided in the AQMA and report reduction in emissions of NOx and PM10 Target emissions reduction: Medium
Perth & Kinross Council_14	Travel Planning	We will continue to support schools developing Green Travel Plans through our school co-ordinator and collect activity data to assess their use through our school co-ordinators	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Survey data will be requested from PKC schools as to the journeys avoided from their GTPs. We will estimate vehicle km avoided in the AQMA and report reduction in emissions of NOx and PM10 Target emissions reduction: Medium
Perth & Kinross Council_15	Travel Planning	Regional/PKC car and Lift Share schemes- there is both a wider scheme, and one specific to PKC employees. We will improve use of the PKC scheme through our own GTP	Other measure: Other measure	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Commercial and residential sources Indicator: Activity data will be collected annually from both schemes and we will estimate vehicle km avoided in the AQMA and report reduction in emissions of NOx and PM10 Target emissions reduction: Small - Medium

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_16	Travel Planning	Green Travel Plans for new developments. We will continue to seek travel plans from Large developments under existing planning arrangements	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Number of GTPs and estimation of effect specified in reporting year Target emissions reduction: Low
Perth & Kinross Council_17	Traffic Management	Keep "City Traffic Management Review" under continual review. Our Traffic and Environmental teams will liaise regularly to discuss the effect of component measures of the CCTMR on Air Quality	Traffic planning and management: Other measure	Other	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: We will report annually on any changes to the CCTMR and how we anticipate this affecting air quality Target emissions reduction: Medium
Perth & Kinross Council_18	Planning and Air Quality	Consider air quality as an issue for the Local Development Plan	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2024 Spatial scale: Local Source affected: Commercial and residential sources Indicator: It is not possible to assign a quantitative indicator. We will report on delivery of the Local Development Plan, and provide evidence that air quality considerations have been formalised within it. Target emissions reduction: Medium
Perth & Kinross Council_19	Planning and Air Quality	Investigate development of supplementary planning guidance on Air Quality	Other measure: Other measure	Planning	Start date: 2011 Expected end date: 2016 Spatial scale: Local Source affected: Other, please specify Indicator: It is not possible to assign a quantitative indicator. We will report progress on development of new guidance, though it is explicitly linked to the LDP Target emissions reduction: Small

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_20	Planning and Air Quality	Consider air quality in planning decisions and formalise decision making process/ interaction with Environmental Health. This can relate not only to new transportation sources, but also new biomass installations or industrial sources	Other measure: Other measure	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Local Source affected: Other, please specify Indicator: It is not possible to assign a qualitative indicator. We will report on cases where air quality was a consideration in the reporting period, and any outcomes of any decisions made. Target emissions reduction: Low
Perth & Kinross Council_21	Planning and Air Quality	N/A	Other measure: Other measure	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Local Source affected: Commercial and residential sources Indicator: N/A Target emissions reduction: N/A
Perth & Kinross Council_22	Procurement and Air Quality	Air quality will be formally considered in tender process for new PKC vehicles. PKC currently specify stringent Euro Standards than necessary. A fleet survey will be necessary in the short term to establish the baseline for improvement	Retrofitting: Retrofitting emission control equipment to vehicles	Implementation	Start date: 2009 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: If vehicles are replaced like for like, the number will be reported annually, with their Euro standard and that of the vehicle replaced. This will feed into an emissions calculation and the saving in NOx and PM10 will be reported annually. If additional vehicles bought, Euro Standards will be reported and an estimation of impact of specifying a more stringent standard will be reported Target emissions reduction: Small-Medium
Perth & Kinross Council_23	Eco -driver training	PKC will seek to expand the existing provision of eco-driver training utilising formed training team to develop and add an eco-training course into existing modular training syllabus. The eco-driving module will become part of our regular driver CPC training package which will be delivered to all LGV drivers on an ongoing basis.	Other measure: Other measure	Preparation	Start date: 2011 Expected end date: 2030 Spatial scale: Local Source affected: Commercial and residential sources Indicator: PKC intend to assess drivers after they have completed the training. The outcomes of these assessments (i.e. the fuel saving per driver) will allow simple calculation of avoided emissions of NOx and PM10 Target emissions reduction: Small

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_24	Eco -driver training	The eco-module will also form part of future training for all council drivers as part of the driver assessment programme, which will also cover the driver's responsibilities on legislation and what pre-use vehicle checks need to be carried out and documented	Other measure: Other measure	Planning	Start date: 2015 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: Small
Perth & Kinross Council_25	Provision of Travel Information	Develop, promote and maintain a comprehensive Travel Information System, covering all modes and users and make this information available in on-line formats. Delivered through Tactran's Regional Travel Information Strategy.	Public information and Education: Internet	Implementation	Start date: 2011 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: We will liaise with Tactran and report annually on the findings of the feasibility work. As initiatives are implemented we will report progress on these individually. Target emissions reduction: Medium
Perth & Kinross Council_26	Signage	Investigate the potential of variable message signage linked to pollution monitoring systems	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: We will report annually the findings of any feasibility work that is carried out and develop the measure further based on their findings Target emissions reduction: Medium
Perth & Kinross Council_27	Alternative Modes	Work closely with Tactran to aid delivery of the Walking and Cycling Strategy for the region to ensure walking and cycling are part of an integrated transport system	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2024 Spatial scale: Local Source affected: Transport Indicator: We will liaise with Tactran annually and report progress with individual measures implemented under the Strategy Target emissions reduction: Medium
Perth & Kinross Council_28	Better access to public transport (note: access to services, not person access to individual buses)	Work with planning colleagues to assess provision of public transport at new and existing developments.	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2009 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: We will report on findings of reviews and any improvements made to the existing public transport network and on new developments that have given public transport facilities Target emissions reduction: Small

Measure code	Description	Focus	Classification	Status	Other information
Perth & Kinross Council_29	Idling Emission Reduction	Enforce Vehicle Idling Regulations	Traffic planning and management: Other measure	Other	Start date: 2010 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: Number of vehicles subject to enforcement. Target emissions reduction: Small
Perth & Kinross Council_30	Roadside Emission Testing	Authorised Personnel to carry out roadside testing	Other measure: Other measure	Other	Start date: 2010 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: Number of vehicles subject to enforcement Target emissions reduction: Small
Perth & Kinross Council_31	LAQM Marketing	Enhance existing provisions of publicity materials and ensure they reach their target audience. Organise publicity initiatives in schools, large employers, public sector	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: Publication of materials, events held website statistics Target emissions reduction: Small - Medium
Perth & Kinross Council_32	LAQM Monitoring and Reporting	PKC will continue to monitor air pollution and will meet its statutory reporting requirements	Other measure: Other measure	Implementation	Start date: 2009 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Monitoring data will be provided in annual progress reports to track the overall effect of the AQAP Target emissions reduction: Small - Medium
Perth & Kinross Council_33	Electric Vehicle Charging Infrastructure	PKC will seek to expand the current Electric Vehicle Charging Point Infrastructure	Public procurement: Other measure	Implementation	Start date: 2012 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: Report annually on the number of charging points within region Target emissions reduction: Small - Medium
Perth & Kinross Council_34	Hydrogen Refuelling Station	PKC to develop or support the development of hydrogen refuelling station at Perth Food & Drink Park, Arran Road, Perth	Public procurement: Other measure	Preparation	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A