

<b>Title: Review of Local Air Quality Management</b> <b>IA No:</b> <b>Lead department or agency:</b> Defra <b>Other departments or agencies:</b> [DfT/CLG/DH/EA/HMT]	<b>Impact Assessment (IA)</b>		
	<b>Date:</b> 01/01/2013		
	<b>Stage:</b> Development/Options		
	<b>Source of intervention:</b> Domestic		
	<b>Type of measure:</b> Secondary legislation[?]		
<b>Contact for enquiries:</b>			

<b>Summary: Intervention and Options</b>	<b>RPC Opinion:</b> Awaiting Scrutiny
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Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, One-Out?	Measure qualifies as
£m	£m	£m	No	NA
			No	NA

**What is the problem under consideration? Why is government intervention necessary?**

There are EU agreed standards for air quality based on World Health Organisation guidelines to reduce the risks to human health and the environment from air pollution. Local action plays a significant role in meeting these standards through measures to reduce pollution from traffic and other sources. Reviews of the current arrangements for local air quality management by local authorities (LAs) suggests that the existing focus on the diagnosis of local air quality hot spots, distracts resources from action to meet EU air quality standards and to reduce associated health risks. Government intervention is necessary to redress this balance.

**What are the policy objectives and the intended effects?**

The objective is to transform local air quality management or LAQM so that local authorities focus on action to improve air quality and to achieve better public health and environmental outcomes rather than on the monitoring and reporting process. This impact assessment identifies options for this. The intended effects would be that local authorities focus their resource on measures to improve air quality instead of on diagnosis of local air quality hotspots. This would entail realigning local obligations to meet EU air quality standards, clarifying roles and responsibilities for action; reducing reporting burdens and providing local authorities with access to evidence on best practice measures to improve air quality.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)** The options considered are: **0: Do Nothing**; **1: BAU with limited changes**, LAs no longer required to carry out further assessments; **2: Concentration on Action Planning and focused reporting**. Including changes in option 1 plus LAs are no longer required to carry out updating and screening assessments; **3: Alignment with EU requirements to meet air quality limit values**. Including changes in option 2 plus LAs are no longer required to carry out detailed assessments and Making/Amending an AQMA; **4: LAQM subsumed into planning and development control**. Including changes in option 3 plus LAs are no longer required to carry out annual reporting and preparing action plans. **Option 3 is the preferred option as it will better align LA duties to EU requirements to meet air quality limit values**. By freeing up more resources than options 1-2, LAs would have the ability to focus spending on more action planning to help meet EU air quality standards. It offers the best balance of costs and benefits, when non-monetised as well as monetised impacts are considered. Although cost savings are slightly greater for Option 4 than option 3 it increases the risk of the UK not meeting EU air quality standards. As LAs would only have to consider air quality through planning and transport, air quality outcomes and impacts could worsen putting the UK at risk of infraction.

<b>Will the policy be reviewed?</b> It will/will not be reviewed. <b>If applicable, set review date:</b> Month/Year					
Does implementation go beyond minimum EU requirements?			No		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.		<b>Micro</b> No	<b>&lt; 20</b> No	<b>Small</b> No	<b>Medium</b> No
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)				<b>Traded:</b>	
				<b>Non-traded:</b>	

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

# Summary: Analysis & Evidence

Policy Option 1

Description: BAU with limited changes

## FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2013	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 1.5	High: 2.1	Best Estimate: 1.8

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate		0	0

### Description and scale of key monetised costs by 'main affected groups'

There are no monetised costs associated with this option. The only change under this option would be to remove requirements for further assessment. Information that would have been gathered through the further assessment can be gathered as part of either preparing detailed assessments or action plans without additional cost.

### Other key non-monetised costs by 'main affected groups'

Defra would incur some minor additional cost from amending current guidance to take account of changes, which have not been monetised as they are assumed to be negligible.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	0.2	1.5
High	Optional	0.3	2.1
Best Estimate		0.3	1.8

### Description and scale of key monetised benefits by 'main affected groups'

PV Benefits are cost savings to Local Authorities from no longer carrying out further assessments £1.8m. This assumes that approximately 50 further assessments are carried out each year at a cost of £5.5k per assessment. High and low estimates represent a range of +/- 15% to reflect the level of uncertainty with central estimates.

### Other key non-monetised benefits by 'main affected groups'

Savings from no longer having to prepare further assessments can be applied into the quicker preparation and delivery of action plan measures. This would contribute to improved public health.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
Key risk is that local authorities do not gather further assessment information through other routes (Detailed assessment or action plans) and measures to improve air quality are less effective as a result. This is considered a minor risk as local authority action planning is understood to involve such information gathering.		

## BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	No	IN/OUT/Zero net cost

# Summary: Analysis & Evidence

# Policy Option 2

Description: Concentration on Action Planning and focused reporting

## FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2013	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 7.7	High: 10.3	Best Estimate: 8.9

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	0	0
High	Optional	0	0
Best Estimate	0.05	0	0.2

### Description and scale of key monetised costs by 'main affected groups'

This option would remove requirements for Further Assessments and for preparation of updating and screening assessments (USAs) every three years and would concentrate on action planning. There would be some one-off and ongoing costs to local authorities from having to assimilate new guidance on action planning and revised progress reports.

### Other key non-monetised costs by 'main affected groups'

There might be costs associated with reduced detailed understanding of local air quality as a result of no longer carrying out USAs. As with Option 1 minor additional costs to Defra to amend current guidance are considered negligible and have not been monetised.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	1.2	7.7
High	Optional	1.6	10.4
Best Estimate		1.4	9.1

**Description and scale of key monetised benefits by 'main affected groups'** Local authorities would no longer carry out updating and screening assessments of local air quality every three years, or prepare further assessment reports. This would represent a PV benefit of £9m. There would be benefits to Defra from not having to appraise USA reports or further assessments. These benefits to Defra might be offset by costs from preparing guidance and tools to support local authorities in action planning (see above). High and low estimates represent a range of +/- 15% to reflect the level of uncertainty with central estimates.

### Other key non-monetised benefits by 'main affected groups'

With the increased focus on action planning there would be potential benefits from improved air quality by having better implementation of air quality measures and better public health outcomes. Less time would be spent by Defra on appraising reports which would allow more time to be devoted to supporting action to improve air quality.

Key assumptions/sensitivities/risks

Discount rate (%)

3.5

Key risk is that local authorities lose expertise in diagnosis of air quality and do not apply savings from reporting to action planning and measures to improve air quality are weaker as a result and assumed non-monetised benefits are not realised.

## BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:				In scope of OIOO?	Measure qualifies as
Costs:	0	Benefits:	0		
				No	IN/OUT/Zero net cost

# Summary: Analysis & Evidence

# Policy Option 3

Description: Alignment with EU requirements to meet air quality limit values.

## FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2013	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 9.5	High: 61.4	Best Estimate: 11.3

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	0	0
High	Optional	0	0
Best Estimate	0.05	0	0.4

### Description and scale of key monetised costs by 'main affected groups'

In this option local authorities would retain a duty to improve air quality where it did not meet EU air quality standards. They would not be required to assess local air quality outside this but would be required to report on significant air quality measures where they might assist in meeting EU air quality standards. There would be some one-off and ongoing costs to local authorities from having to assimilate new guidance on action planning and revised progress reports. There would also be some additional costs to Defra from having to carry out air quality modelling and reporting to compensate for that not carried out by local authorities.

### Other key non-monetised costs by 'main affected groups'

Local air quality hotspots outside the national assessment that might otherwise have been taken into account by LAs might get overlooked and lead to some local health impacts. There would also be some costs to local authorities from having to quantify and report on significant measures to improve air quality following guidance provided by Defra. Where these occur they would partially offset savings made from no longer having to report on local air quality. Negligible additional costs to Defra have not been monetised.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	1.5	9.9
High	Optional	8.7	61.8
Best Estimate		1.7	11.6

### Description and scale of key monetised benefits by 'main affected groups'

PV Benefits are cost savings to local authorities from: No longer carrying out: further assessments £1.8m, Updating and Screening Assessment £7.2m, detailed assessments £1.4m and Making/Amending an AQMA after year 1 £1.1m. It is uncertain how much LAs will reduce monitoring in response to this option, so savings from diffusion tube monitoring £11.5 and Automatic monitoring £37m are included as a high estimate, and to reflect the fact that it is not a requirement of the regulation. High and low estimates represent a range of +/- 15% to reflect the level of uncertainty with central estimates.

### Other key non-monetised benefits by 'main affected groups'

Non monetised, public health benefits should arise from better action planning and quicker implementation of measure to improve air quality.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
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The high end cost savings associated with diffusion tube monitoring and automatic monitoring assume 15% per annum decrease in costs from the 4<sup>th</sup> year, the former averages to £500k from the first three years and the latter averages to £5m over the first three years. This assumes that local authorities would take more significant actions to improve air quality rather than reduce focus on air quality overall. Local air quality hotspots outside the national assessment might build up.

## BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0	No	IN/OUT/Zero net cost

# Summary: Analysis & Evidence

# Policy Option 4

Description: LAQM subsumed into planning and development control.

## FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2013	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 19.7	High: 90.1	Best Estimate: 23.2

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	0	0
High	Optional	0	1.3
Best Estimate		0	0

### Description and scale of key monetised costs by 'main affected groups'

Local authorities do not have discrete duties to manage air quality rather air quality is taken into account as part of planning and development controls. At the high end costs for Defra would increase from having to carry out more monitoring and assessment of air quality centrally.

### Other key non-monetised costs by 'main affected groups'

Air Quality at local level might worsen as local authorities would not have a duty to take action to actively improve air quality this would potentially lead to increased local health impacts and worsening environmental amenity. Without guidance documents at a national level, LAs may struggle to assess air quality problems, which could potentially further worsen air quality. It would impact upon the UK's ability meet EU obligations on air quality leading to infraction. Any national action to improve air quality would take less account of local differences leading to greater costs and inefficiency.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	2.9	19.7
High	Optional	9.3	91.4
Best Estimate		3.5	23.2

### Description and scale of key monetised benefits by 'main affected groups'

PV Benefits are cost savings to LAs from no longer carrying out: further assessments £ 1.8m, Updating and Screening Assessment £7.3m, annual reporting £9.3m, detailed assessments £1.4m, preparing action plans £1.1m and Making/Amending an AQMA after year 1 £1.1m. There are also cost savings of £1.1m to Defra as appraisal of reports and guidance and support are reduced. We have also presented savings from diffusion tube monitoring £12.7m and Automatic monitoring £52.1m as a high estimate, because of the uncertainty with how much LAs reduce monitoring and to reflect the fact that it is not a requirement of the regulation.

### Other key non-monetised benefits by 'main affected groups'

There is lower incentive for air quality improvement, as requirements are only related to mitigation of planning and development or transport impacts.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
<p>The high end of the cost savings associated with diffusion tube monitoring and automatic monitoring assume 15% per annum decrease in costs from the 4<sup>th</sup> year, the former averages to £500k from the first three years and the latter averages to £5m over the first three years. It is assumed that local authorities would at least use planning system to prevent air quality from getting worse as a result of developments etc. But there would be less incentive for local authorities to act to improve air quality which would increase infraction risk.</p>		

## BUSINESS ASSESSMENT (Option 4)

Direct impact on business (Equivalent Annual) £m:	In scope of OIOO?	Measure qualifies as
Costs: 0	No	IN/OUT/Zero net cost
Benefits: 0		
Net: 0		

# Evidence Base

## Introduction

Whilst there have been significant improvements in air quality over many decades poor air quality continues to impact upon public health and the environment, acting as an externality resulting in far more pollution than is socially desirable. Impacts from fine particulate matter alone (PM<sub>2.5</sub>) have been associated with an effect on mortality equivalent to nearly 29,000 deaths at typical ages of death in 2008 in the UK and an average loss of between six months life expectancy<sup>1</sup>. The cost of this poor air quality has been estimated to be about £16billion at 2008 prices<sup>2</sup>.

Standards have been agreed at European level to improve air quality and to reduce the health and environmental impacts of air pollution. These standards take account of World Health Organisation advice on air pollution and have been transposed into UK law. The standards set maximum concentrations for a range of pollutants in ambient air. Some are set as absolute limits which must be attained by a certain date (limit values) others are set as target levels which must be attained by certain date but this should not entail disproportionate cost.

The most significant pollutants of concern today are nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM) and ozone. Measures to reduce emissions of NO<sub>2</sub> and PM have been agreed at EU level especially with respect to industrial sources and transport sources. At national level the UK Government has implemented measures to incentivise reductions in emissions through for example promoting ultra low emission vehicles (such as hybrid and electric cars) or promoting the uptake of newer vehicles that have higher emission standards (or Euro standards).

Despite these national measures local air quality problems can still arise. These can be caused by the density of traffic within cities, congestion, the age and make up of local vehicle fleets or other factors. For these reasons the Government introduced Local Air Quality Management in the Environment Act 1995. This required local authorities to periodically review and assess local air quality against national objectives and where it did not meet these objectives local authorities would declare an air quality management area and put in place measures to reduce pollution in pursuance of relevant national objectives. This impact assessment identifies options to reform LAQM by reducing cost burdens for Local Authorities and focusing action on improving air quality rather than monitoring and reporting processes.

In the absence of LAQM legislation, local authorities might still be expected to have some incentive to reduce the health impacts of air pollution to reduce local health burdens and in response to local public concern. The inclusion of an indicator to reflect the local impact of air pollution in the public health outcomes framework should help to support this. However the factors that cause air pollution especially relating to transport and energy production are often divorced from the consequences of air pollution. Moreover public understanding of the continuing impacts of air pollution and what personal action can help to reduce it has been poor. Historically examples such as the response to the 1950s London Smog episode which led to the establishment of the Clean Air Act suggest that local authorities need some legislative framework to support the introduction of measures to reduce pollution otherwise arguments for measures to improve air quality may suffer the “tragedy of the commons” with personal responsibility to reduce pollution being dissipated rather than acted upon.

## Problem under consideration

Despite measures to improve air quality, the UK, like many other Member States, is having problems meeting EU Air Quality standards. In part this is caused by the poor abatement performance of euro standards for certain vehicle classes and also increased dieselization of the vehicle fleet. This has meant that the UK have reported significant exceedences of the limit value for NO<sub>2</sub> especially and does not expect to comply completely with these limits until 2020 for some parts of the UK, with London unlikely to be able to comply with limits until 2025.

The challenge in meeting EU air quality limits is reflected at local level with local authorities having declared a large number of local air quality management areas where national objectives especially for NO<sub>2</sub> have not been met almost entirely as a result of road transport pollution. Past reviews of local air

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<sup>1</sup> <http://www.comeap.org.uk/images/stories/Documents/Reports/comeap%20the%20mortality%20effects%20of%20long-term%20exposure%20to%20particulate%20air%20pollution%20in%20the%20uk%202010.pdf>

<sup>2</sup> <http://archive.defra.gov.uk/environment/quality/air/airquality/panels/igcb/documents/100303-aq-valuing-impacts.pdf>

quality management have concluded that local authorities are very effective at diagnosing air quality hot spots but have been less effective at implementing measures to improve air quality and at quantifying the benefits of these measures.<sup>3</sup>

Local action to improve air quality can play an important part in helping to meet EU air quality standards by helping to target national measures or to manage traffic congestion and demand etc. However this role has not been properly reflected when the UK Government reporting of air quality to the European Commission and local action has been more focused on diagnosing local air quality hotspots rather than taking strategic measures towards compliance with EU air quality standards. This has led to confusion between local and national priorities for air pollution and the contribution local action makes to meeting EU air quality standards and improving public health.

### **Rationale for intervention**

Air pollution causes negative health effects, which EU air quality limits are looking to prevent. However, the UK is currently not meeting its EU air quality targets. National measures to reduce emissions from transport and other sources can only go so far and local measures are needed to tackle local pollution hotspots or to deliver area wide strategic measures to reduce transport pollution especially in towns and cities. The current system of local air quality management (LAQM) is not best aligned to support such strategic action or to support the UK in meeting its EU air quality limits. This is in part because the current arrangements for local air quality management are unduly focused on diagnosing and reporting on local air quality hotspots. Given that there is a generally good understanding of local air quality, these existing regulatory requirements divert resources away from LAs that could be spent on mitigation measures and taking more strategic action to improve air quality and to work towards compliance with our EU obligations.

There is also a discontinuity between local authorities focusing on national objectives whereas nationally the focus is on meeting EU limit values. Although both these are health based and follow the same principles, having two systems has led to confusion and uncertainty as to expectations. Introducing greater consistency between national and local requirements would help to reduce confusion and improve focus on measures to tackle poor air quality. Given the scale of the air quality problems we face, we want to move the focus of LAQM away from the local assessment of air quality and towards increased action planning, to drive improvements in air quality. Currently, LAQM imposes a large cost burden on local authorities from reporting of local air quality. Freeing up resources from this monitoring and reporting of air quality could lead to cost savings and/or increased capacity for action to improve air quality.

### **Policy objective**

The objective of this consultation is to develop options for reforming LAQM whereby:

- Local action is focused on what is necessary to support air quality improvements to benefit public health and to work towards EU air quality standards
- Local government and other stakeholders are clear on their roles and responsibilities and work together to improve air quality
- Local authorities have simple reporting requirements with less bureaucracy and more time and resources to concentrate on actions to improve air quality and public health
- Local authorities have access to information about evidence based measures to improve air quality including on transport and communications

This consultation will inform a second consultation, which will propose changes to regulations and guidance to implement the preferred option in light of comments received. A further impact assessment will be prepared in support of that consultation.

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<sup>3</sup> <http://archive.defra.gov.uk/environment/quality/air/airquality/local/documents/laqm-report.pdf>

## Description of options considered (including do nothing)

An 'Option 0' or business as usual (BAU) is also included in this Impact Assessment, against which all the other options are compared. The options differ largely in the extent to which local duties are mandated: option 1 reflects minimal change, but option 4 would see the majority of LAQM regulations repealed.

Option #	Title	Key points
Option 1	Business As Usual with limited changes	<ul style="list-style-type: none"> <li>– Maintain review and assessment reporting cycle, but remove the need for Further Assessments</li> <li>– Review compliant objectives to see where action can be reduced. Note this has not been monetised but the costs are assumed to be negligible.</li> <li>– As BAU retain separate local air quality regulations</li> </ul>
Option 2	Concentration on Action Planning and focused reporting	<ul style="list-style-type: none"> <li>– All of Option 1 plus</li> <li>– Change focus from review and assessment to action planning. Through, reducing reporting requirements – e.g. annual local air quality report to replace Updating and Screening Assessment (USA) report cycle</li> <li>– This would then better align Air Quality England Regulations and Air Quality Standards Regulations</li> <li>–</li> </ul>
Option 3	Alignment with EU requirements to meet air quality limit values	<ul style="list-style-type: none"> <li>– All of option 2 plus</li> <li>– LAs are no longer required to carry out detailed assessments and Making/Amending an AQMA. This would Consolidate and amend regulations so that local authority legal duties are linked more directly in helping to meet and maintain compliance with EU air quality limit values and targets where there is scope for action at the local level.</li> <li>– This would mean less scrutiny from central government on local hotspots outside of the national assessment but stronger lead and advice on action planning</li> </ul>
Option 4	Separate local air quality management duties do not exist	<ul style="list-style-type: none"> <li>– Repealing of requirements as done under option 3 plus</li> <li>– LAs are no longer required to carry out annual reporting and preparing action plans. This means that there are no specific duties on LAs to assess or report on air quality locally. There would be a greater reliance on national assessment to judge risks arising from transport and development proposals</li> <li>– Although, there are no separate LAQM duties, LAs would still have to take account of air quality when appraising transport and development proposals and policies</li> </ul>

## Monetised and non-monetised costs and benefits of each option (including administrative burden)

The main costs of LAQM relate to reporting (largely carried out in house, but with some external consultancy) and monitoring (largely carried out externally).

### Costs:

#### Local Authority Monitoring and Reporting

We present these costs as a baseline to enable a comparison to be made for the other options.



## Consultancy Costs

We estimate these costs based on expert knowledge within Defra and feedback from the survey of local authorities described below about the various activities undertaken on behalf of local authorities. We make assumptions about the cost per activity, and frequency of various activities, as discussed below. These assumptions will be tested through the consultation.

### Reporting:

- Updating and Screening Assessments (USAs) are carried out every three years, with Progress Reports (PRs) in the remaining years. We assume 310 APs/PRs. We also assume that 10% of LAs use consultants for USAs and 5% for PRs, at a cost of £2.5k and £1.7k per report respectively. The estimated annual cost for USAs is therefore:  $310 \times 10\% \times 1/3 \times £2.5k = £26k$  and the annual cost estimate for PRs is therefore:  $310 \times 5\% \times 2/3 \times £1.7 = £17k$  in 2013 prices.
- Action Plans (APs): we assume an annual average of 40 plans produced, of which around 10% would be undertaken by consultants, at a cost of around £8,000 per plan. The annual cost for APs is estimated at  $40 \times 10\% \times £8.3k = £33.4k$  in 2013 prices.
- Detailed Assessments (DAs) and Further Assessments (FAs): we assume around 50 per annum, all undertaken externally. We assume costs of £2.6k for a DA and £3.9k per FA. For DAs we estimate an annual cost of  $50 \times £2.6k = £130k$  in 2013 prices. For FAs we estimate  $50 \times £3.9k = £196k$  in 2013 prices.

### Monitoring:

- For monitoring local air quality with diffusion tubes, LAs incur laboratory costs. We assume around 30 tubes per LA. We assume a cost, incurred monthly (i.e. 12 per year) of around £5 in laboratory costs per tube. The estimated total for diffusion tubes is therefore  $326 \times 30 \times 12 \times £5.2 = £612.3k$  in 2013 prices.
- We assume around 600 sites monitoring NO<sub>x</sub>, with average maintenance costs of £9.4k/year. PM<sub>10</sub> is monitored in around a quarter of these, with additional maintenance costs assumed at £3.1k/year. The total cost of monitoring is therefore around £6.7m per year ( $600 \times £9.4k + 150 \times £3.1k + £612.3k$  from diffusion tubes above) in 2013 prices]

Monitoring costs will also likely involve capital expenditure over the period. Note that Monitoring is not a requirement under existing regulations.

### Officer Time

We established the baseline cost of LAQM associated with local authority officer's work by applying costs in a manner consistent with the Standard Cost Model. We apply the standard 30% uplift for non-wage costs.

We used the 2011 Annual Survey of Hours and Earnings to estimate Local Authority officials' salaries based on the mean-full time salary for comparable job titles, as follows:

Job Title	ASHE Category	Annual Salary in 2011	In 2009 prices
Technical Officer	Science and engineering technicians n.e.c.	26,000	25,000
Environmental Health Officer	Environmental health officers	31,000	29,000
Senior EHO	Public service associate professionals	33,000	31,000
Principal EHO	Natural environment and conservation managers	40,000	38,000

We asked representatives of 11 local authorities (a mix of urban, metropolitan and rural) to provide the amount of work associated with each of eight activities per year, by grade. The results were quite diverse: both by grade and the number of hours worked, and when calculating the total salary cost. For

this reason, the average cost of local authority officers' time is quite uncertain. Further evidence will be sought during the consultation.

Activity	Number of Authorities	Cost each
Updating and Screening Assessment	310	2,921
Progress Reports	220	1,872
Detailed Assessment/Further Assessments	50/50	4,062
Action Plan	40	1,872
Making/Amending an AQMA	70	5,299
Annual reporting	310	2,690
Diffusion tube monitoring	310	3,576
Automatic Monitoring	310	7,139

The estimated total cost of local authority officer time of all these activities combined comes to £6.6m per year.

#### Monitoring Costs to Defra

The following table shows the current monitoring costs incurred by Defra in 2013 prices:

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Guidance (documents)	£10	£10	£10	£10	£10	£10	£10	£10	£10	£10
Guidance tools	£51	£51	£51	£51	£51	£51	£51	£51	£51	£51
Helpdesk and website	£71	£71	£71	£71	£71	£71	£71	£71	£71	£71
Report Appraisal	£92	£92	£92	£92	£92	£92	£92	£92	£92	£92
Officer time										
AQ grant administration	£31	£31	£31	£31	£31	£31	£31	£31	£31	£31
Additional monitoring costs	£21	£43	£64	£100	£136	£171	£221	£271	£321	£371
Additional modelling/reporting costs										
<b>Total costs</b>	<b>£276</b>	<b>£298</b>	<b>£319</b>	<b>£355</b>	<b>£391</b>	<b>£426</b>	<b>£476</b>	<b>£526</b>	<b>£576</b>	<b>£626</b>

#### Summary of Baseline Costs:

In the baseline we assume that costs are flat in real terms (i.e. they rise with inflation). Reporting comes to around £5m, and Local Authority monitoring to around £11.5m per year, totalling £16m.

LA Reporting and Monitoring Costs	Cost per year, £'000, 2013 prices
Updating and Screening Assessment	1,041
Progress Reports	325
Detailed Assessment	201

Further Assessments	263
Action Plan	168
Making/Amending an AQMA	139
Annual reporting	1,040
<b>Sub-Total Reporting</b>	<b>3,177</b>
Diffusion tube monitoring	1,969
Automatic monitoring	8,334
<b>Sub-Total Monitoring</b>	<b>10,303</b>
<b>Total</b>	<b>13,480</b>

For each option, we then considered whether benefits would result from any of these costs being avoided or reduced. Note, that monitoring is not required under existing regulations. Further, there is a lot of uncertainty regarding how much monitoring would fall by under each option. Therefore, changes in monitoring costs are only factored into the sensitivity range.

### Option 1

Further Assessments are no longer required under this option. Information that would have been gathered through the further assessment is instead collected as part of the process to prepare an action plan at no additional cost. Reporting benefits (or cost savings) of around £263k per annum of not requiring FA to LAs and associated benefits to Defra from not having to appraise further assessments. Total estimated PV benefits of this option are about £2m over 10 years. There would be some one-off and ongoing costs to Defra from having to revise guidance but these are considered to be negligible. It is assumed that savings from longer having to prepare further assessments would be applied to the quicker preparation and implementation of air quality action plan measures. This would contribute to improve public health.

The net benefit from this option is £1.8 m over the 10 year appraisal period.

Given the uncertainty with collecting the analysis we have generally assumed +/-15% as sensitivity around the benefit estimates. This reflects expert judgement on the level of uncertainty around the central cost saving estimates.

### Option 2

This option assumes LAs are no longer required to carry out FAs, at a cost of £263k per annum, and Updating and Screening Assessment (USAs), at a cost of £1m. In addition, there are associated report appraisal cost savings for Defra of £10k per annum. This equates to overall PV benefits of £9.1m over the 10 year appraisal period.

These cost savings are offset by costs from providing guidance and resources for action planning of £77k in year 1 and £31k thereafter per annum. These PV costs are estimated to be £156k over the 10 year appraisal period. There might also be non-monetised costs associated with reduced detailed understanding of local air quality. We would also expect non-monetised benefits from greater focus on action planning and implementation of measures to improve air quality leading to better air quality and health outcomes.

The net benefit from this option is £8.9m over the 10 year appraisal period.

Given the uncertainty with collecting the analysis we have generally assumed +/-15% as sensitivity around the benefit estimates. This reflects expert judgement on the level of uncertainty around the central cost saving estimates.

### Option 3

This option assumes LAs are no longer required to carry out FAs, at a cost of £263k per annum, USAs, at a cost of £1m, Detailed Assessments (DAs), at a cost of £201k per annum and making and amending an AQMA, at a cost of £139k per annum after year 1. This equates to reporting PV savings for LAs of £11.5m over 10 years.

In addition, there are cost savings for Defra of £20k per annum by way of higher reporting costs to Defra, which equates to PV costs of £135k over the 10 year appraisal period. Overall PV benefits are £11.6m over 10 years.

These cost savings are offset by higher guidance costs to Defra of £77k in year 1 and £31k thereafter per annum as a result of no longer requiring USAs and changing the focus to action planning and implementation of measures. There would also be an additional £34k per annum of modelling and reporting costs to Defra and 4 weeks' worth of an SSO time per year. These PV costs are estimated to be £379k over the 10 year appraisal period. There might also be non-monetised costs associated with reduced detailed understanding of local air quality. The net benefit from this option is £11.3m over the 10 year appraisal period.

We would also expect non-monetised benefits from greater focus on action planning and implementation of measures to improve air quality leading to better air quality and health outcomes.

Given the uncertainty with collecting the analysis we have generally assumed +/-15% as sensitivity around the benefit estimates. This reflects expert judgement on the level of uncertainty around the central cost saving estimates.

In addition, for the high sensitivity range we have assumed the demand for monitoring will decline, as there are less compliance requirements than BAU. We assume the costs fall slightly over the first 3 years, averaging £500k per year for diffusion tube monitoring, and averaging £5m per year for automatic monitoring. Following that, we project a decline in spending on monitoring at a rate of 15% per year. This equates to monitoring PV savings for LAs of £48.4m over 10 years.

### Option 4

As option 3 in terms of reporting PV savings of £11.5m over 10 years for LAs.

There are cost savings for Defra on guidance documents, £10k per annum, helpdesk and website, £36k per annum, appraising reports, £92k per annum, and a further £31k per annum on AQ grant admin savings. This equates to £1.1m of savings of Defra spend.

We have not been able to model any additional costs for this option. Therefore, PV benefits and net benefits are £23.2m over 10 years.

Non-monetised impacts include costs arising from reduced activity at local level to improve air quality resulting in worsening air quality and worsening health outcomes overall and increased risk of infraction for non achievement of EU air quality standards. However, there is a level of uncertainty regarding how much LAs have an incentive to meet air quality standards without the regulations given local incentives including health and other amenity benefits to do so. This is a question that we would look to gather more information on at the consultation stage.

Given the uncertainty with collecting the analysis we have generally assumed +/-15% as sensitivity around the benefit estimates. This reflects expert judgement on the level of uncertainty around the central cost saving estimates.

In addition, for the high sensitivity range we have assumed the demand for monitoring will decline, as there are less compliance requirements than BAU. We assume the costs fall slightly over the next 3 years, averaging £500k for diffusion tube monitoring, and averaging £5m for automatic monitoring. Following that, we project a decline in spending on monitoring to fall to 0 by year 2018. Together, this equates to monitoring PV savings for LAs of £86.8m over 10 years at the high end of the range. These cost savings are offset by higher monitoring costs for Defra equating to PV costs of £1.3m over the 10 year appraisal period.

### Summary of costs and benefits

Summary of costs and benefits, 2013-2022, £m in 2013 prices

Policy	(£m)	Low	Central	High
Option 1:	PV cost	0	0.0	0.0
	PV benefits	1.5	1.8	2.1
	<b>NPV</b>	1.5	1.8	2.1
Option 2:	PV cost	0	0.2	0.2
	PV benefits	7.7	9.1	10.4
	<b>NPV</b>	7.7	8.9	10.3
Option 3:	PV cost	0	0.4	0.0
	PV benefits	9.9	11.6	61.8
	<b>NPV</b>	9.5	11.3	61.4
Option 4:	PV cost	0	0.0	1.3
	PV benefits	19.7	23.2	91.4
	<b>NPV</b>	19.7	23.2	90.1

This IA sets out monetised estimates of the potential cost savings of a range of options for reforming Local Air Quality Management. The options vary depending on the burden of duties on Local Authorities, with associated changes in the focus of action to improve air quality.

While improvements to air quality and the resulting public health outcomes are a policy objective, impacts on air quality will be indirect in nature. This is because Local Authorities will have a choice over whether their cost savings are directed towards additional resource for air quality improvements, as we can't mandate this. The potential air quality impacts have therefore not been estimated at this stage and are non-monetised.

The costs to Defra incurred under Options 2 and 3 for producing guidance for LAs that makes it easier for them to implement measures to improve air quality and to quantify their benefits. These costs to Defra should therefore increase the scale of the non-monetised air quality benefits. Option 4 results in costs to Defra for greater monitoring but no additional guidance is produced relative to the baseline, so air quality outcomes are unlikely to improve (and could worsen) under Option 4.

Option 3 is the preferred option, as it has the second highest monetised net benefits. It is considered to produce the greatest non-monetised benefits, by ensuring that local action is more directly focused on meeting EU obligations which should help to maximise health outcomes and reduce infraction risks arising from non-compliance. Although Option 4 has highest net monetised benefits of all the options, this is unlikely to incentivise LAs to improve AQ and would more likely lead to worsening air quality and health outcomes and increased risk of infraction. This would lead to a worse cost – benefits ratio over the longer term and could significantly increase levels of air pollution or delay improvements. This would also increase local health burdens and EU infraction risk.

**Option 1** would lead to minimal changes. With improvements made to current guidance there may be some action taken leading to air quality benefits.

**Option 2** would shift guidance to focus on the efficacy of measures and to support more joined-up working, which should lead to greater capabilities for Local Authorities to implement effective measures on air quality and better air quality outcomes.

**Option 3** would mean reliance on national monitoring, which could mean Local Authorities are less well equipped to select the most appropriate measures locally (this could be especially problematic if local monitoring differs significantly from national assessments). However, this could lead to better targeting of action where national assessments identify pollution hotspots, leading to improved compliance with EU limits.

**Option 4** would remove duties to take action. Without the legal imperative the pressure for local action to improve air quality is likely to be dissipated and this may lead to less action overall than the do-nothing

option and an overall negative impact on air quality.

### **Rationale and evidence that justify the level of analysis used in the IA (proportionality approach)**

The cost savings in this IA are based on expert knowledge and a small sample of Local Authorities. Given this early-stage consultation, it would have been disproportionate to undertake detailed surveys, particularly given the limited resources available to LAs. There will be opportunities to complete more sophisticated analysis while working up a proposal for the second-stage consultation and subsequent to that consultation. The consultation process and publication of the assumptions used in the IA will allow LAs and other stakeholders to test them and comment, such that they can be further refined.

The nature of the proposed changes, to the framework of how Local Authorities respond to air quality problems, rather than identifying particular measures, means that it is not possible to produce analysis of the impacts of the proposals. As these benefits cannot be modelled, we cannot assess the potential costs and benefits on air quality.

### **Risks and assumptions**

The main assumptions used to calculate the cost savings are discussed in the relevant sections. One key uncertainty is around the extent to which Local Authorities will use resource savings to work on taking action to improve air quality, rather than using the financial savings for other purposes.

Risks:

- Greater costs incurred might be incurred by Defra from having to take more significant national action to improve air quality should local authorities no longer prioritise air quality (this would be especially so under option 4).
- It is generally assumed that without the air quality requirements LA standards would worsen, hence option 3 is preferred to option 4. However, given local incentives to reduce air quality including health costs and better air quality may translate to other amenable benefits, it is unclear if and to what extent, the impacts would be under this option. The consultation should provide further evidence on this.
- Increasing focus on meeting EU obligations might lead to air quality hotspots outside these obligations not being addressed and increasing air quality impacts as a result.

### **Direct costs and benefits to business calculations (following OIOO methodology)**

None of the options would impose direct costs or benefits to businesses. The impact is on LAs and Defra only. If reformed LAQM drives new policies or approaches to LAQM by LAs, costs to business could be incurred. These should be considered second-round impacts, and are not considered for this analysis.

### **Wider economic, social and environmental impacts**

This is an options impact assessment and concerns policy which impacts on local authorities only. It is not expected to have any wider impacts upon business, competition or the economy.

As indicated above there may be health benefits arising from better air quality for some options but these benefits are not monetised.

Varying air quality benefits would be expected from options 1, 2 or 3 arising from greater focus being placed on implementing measures to improve air quality, however it has not been possible to monetise these benefits. Measures to improve air quality can also benefit climate change and noise as well. It is therefore possible that increased action to improve air quality might lead to secondary benefits in these two areas. With option 4 there is a risk that there will be detrimental air quality impacts. The options are not expected to have environmental impacts beyond this.

## Annex 1: Annual costs to Defra

Note annual undiscounted costs are presented in this annex. Costs that are negative are cost savings to Defra.

Baseline/Option 1***	Year									
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Guidance (documents)	£10,000	£10,000	£10,000	£10,000	£10,000	£10,000	£10,000	£10,000	£10,000	£10,000
Guidance tools	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
Helpdesk and website	70000	71400	71400	71400	71400	71400	71400	71400	71400	71400
Report Appraisal	90000	90000	90000	90000	90000	90000	90000	90000	90000	90000
Officer time										
AQ grant administration	30000	30000	30000	30000	30000	30000	30000	30000	30000	30000
Additional monitoring costs	21000	42000	63000	98000	133000	168000	217000	266000	315000	364000
Additional modelling/reporting costs										
<b>Total costs</b>	<b>£271,000</b>	<b>£293,400</b>	<b>£314,400</b>	<b>£349,400</b>	<b>£384,400</b>	<b>£419,400</b>	<b>£468,400</b>	<b>£517,400</b>	<b>£566,400</b>	<b>£615,400</b>

\*\*\*Therefore no additional cost under this option.

Option 2	Year									
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Guidance (documents)	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Guidance tools	£75,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000
Helpdesk and website	£0	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400
Report Appraisal	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000
Officer time	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
AQ grant administration	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Additional monitoring costs for Defra	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Additional modelling/reporting costs	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
<b>Total additional cost</b>	<b>£65,000</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>	<b>£18,600</b>

Option 3	Year									
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Guidance (documents)	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Guidance tools	£75,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000	£30,000
Helpdesk and website	£0	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400	£-1,400
Report Appraisal	£-20,000	£-20,000	£-20,000	£-20,000	£-20,000	£-20,000	£-20,000	£-20,000	£-20,000	£-20,000
Officer time	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
AQ grant administration	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Additional monitoring costs	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Additional modelling/reporting costs	£33,035	£33,035	£33,035	£33,035	£33,035	£33,035	£33,035	£33,035	£33,035	£33,035
<b>Total additional cost</b>	<b>£88,035</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>	<b>£41,635</b>

Option 4	Year									
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Guidance (documents)	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000	£-10,000
Guidance tools	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
Helpdesk and website	£-35,000	£-36,400	£-36,400	£-36,400	£-36,400	£-36,400	£-36,400	£-36,400	£-36,400	£-36,400
Report Appraisal	£-90,000	£-90,000	£-90,000	£-90,000	£-90,000	£-90,000	£-90,000	£-90,000	£-90,000	£-90,000
Officer time	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
AQ grant administration	£-30,000	£-30,000	£-30,000	£-30,000	£-30,000	£-30,000	£-30,000	£-30,000	£-30,000	£-30,000
Additional monitoring costs	£63,000	£42,000	£21,000	£-14,000	£-49,000	£-84,000	£133,000	£182,000	£231,000	£-280,000
Additional modelling/reporting costs	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
<b>Total additional cost</b>	<b>£102,000</b>	<b>£124,400</b>	<b>£145,400</b>	<b>£180,400</b>	<b>£215,400</b>	<b>£250,400</b>	<b>£299,400</b>	<b>£348,400</b>	<b>£397,400</b>	<b>£-446,400</b>

\*Guidance documents (this is an estimate of the average annual cost for preparing guidance based on spend over the past 10 years when the guidance was updated in 2003 and 2009)

Guidance tools (this is an estimate of the average annual cost for updating tools e.g. diffusion tube bias adjustment and emission factor toolkit)

Helpdesk and website (costs for the operation and maintenance of the LAQM helpdesk and website)

Report Appraisal (contractor costs for technical appraisal of Local authority report submissions)

Officer time (defra officer salary costs)

AQ grant administration (includes contractor costs to technically appraise air quality grant applications)

Additional monitoring costs (includes costs to maintain affiliated sites as part of national network) For option 3 this also includes costs of SSO equivalent staff cost for 4 weeks per annum.

Additional modelling/reporting costs



Annex 2: Annual Benefits to LAs

Note cost savings are presented as benefits in this IA. Annual values are cost savings, hence negative; PV total emits the negative to reflect a benefit

Baseline (Option 0)	Assumption for projections	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Projected</b>												
Updating and Screening Assessment	flat	1086	1086	1086	1086	1086	1086	1086	1086	1086	1086	1086
Progress Reports	flat	339	339	339	339	339	339	339	339	339	339	339
Detailed Assessment	flat	210	210	210	210	210	210	210	210	210	210	210
Further Assessments	flat	275	275	275	275	275	275	275	275	275	275	275
Action Plan	flat	175	175	175	175	175	175	175	175	175	175	175
Making/Amending an AQMA	flat	145	145	145	145	145	145	145	145	145	145	145
Annual reporting	BAU	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085
<b>Sub-Total Reporting</b>		<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>	<b>3315</b>
Diffusion tube monitoring	flat	2055	2055	2055	2055	2055	2055	2055	2055	2055	2055	2055
Automatic monitoring	flat	8696	8696	8696	8696	8696	8696	8696	8696	8696	8696	8696
<b>Sub-Total Monitoring</b>		<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>
<b>Total</b>		<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>

Option 1 Benefits	Assumption for projections	PV Benefits	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Updating and Screening Assessment	BAU	0	0	0	0	0	0	0	0	0	0	0
Progress Reports	BAU	0	0	0	0	0	0	0	0	0	0	0
Detailed Assessment	BAU	0	0	0	0	0	0	0	0	0	0	0
Further Assessments	no longer completed	1817	-275	-275	-275	-275	-275	-275	-275	-275	-275	-275
Action Plan	BAU	0	0	0	0	0	0	0	0	0	0	0
Making/Amending an AQMA	BAU	0	0	0	0	0	0	0	0	0	0	0
	BAU	0	0	0	0	0	0	0	0	0	0	0
<b>Sub-Total Reporting</b>		<b>1817</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>
Diffusion tube monitoring	BAU	0	0	0	0	0	0	0	0	0	0	0
Automatic monitoring	bau	0	0	0	0	0	0	0	0	0	0	0
<b>Sub-Total Monitoring</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>		<b>1817</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>	<b>-275</b>

Option 2 Benefits	Assumption for projections	PV Benefits	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Updating and Screening Assessment	no longer completed	7179	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086
Progress Reports	BAU	0	0	0	0	0	0	0	0	0	0	0
Detailed Assessment	BAU	0	0	0	0	0	0	0	0	0	0	0
Further Assessments	no longer completed	1817	-275	-275	-275	-275	-275	-275	-275	-275	-275	-275
Action Plan	BAU	0	0	0	0	0	0	0	0	0	0	0
Making/Amending an AQMA	BAU	0	0	0	0	0	0	0	0	0	0	0
Annual reporting	BAU	0	0	0	0	0	0	0	0	0	0	0
Sub-Total Reporting		8996	-1361	-1361	-1361	-1361	-1361	-1361	-1361	-1361	-1361	-1361
Diffusion tube monitoring	BAU	0	0	0	0	0	0	0	0	0	0	0
Automatic monitoring	BAU	0	0	0	0	0	0	0	0	0	0	0
Sub-Total Monitoring		0	0	0	0	0	0	0	0	0	0	0
Total		8996	-1361	-1361	-1361	-1361	-1361	-1361	-1361	-1361	-1361	-1361

Option 3 Benefits	Assumption for projections	PV Benefits	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Updating and Screening Assessment	no longer completed	7179	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086
Progress Reports	BAU	0	0	0	0	0	0	0	0	0	0	0
Detailed Assessment	no longer completed	1386	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210
Further Assessments	no longer completed	1817	-275	-275	-275	-275	-275	-275	-275	-275	-275	-275
Action Plan	BAU	0	0	0	0	0	0	0	0	0	0	0
Making/Amending an AQMA	all revoked in year 1	1102	0	-145	-145	-145	-145	-145	-145	-145	-145	-145
Annual reporting	BAU	0	0	0	0	0	0	0	0	0	0	0
Sub-Total Reporting		11503	-1571	-1716	-1716	-1716	-1716	-1716	-1716	-1716	-1716	-1743
Diffusion tube monitoring	ave £500 in 1-3, 15% PA decline thereafter	11523	-1555	-1555	-1555	-1630	-1694	-1748	-1794	-1833	-1866	-1895
Automatic monitoring	ave £5000 in 1-3, 15% PA decline thereafter	36921	-3696	-3696	-3696	-4446	-5084	-5626	-6086	-6478	-6810	-7093
<b>Sub-Total Monitoring</b>		<b>48444</b>	<b>-5251</b>	<b>-5251</b>	<b>-5251</b>	<b>-6076</b>	<b>-6777</b>	<b>-7373</b>	<b>-7880</b>	<b>-8311</b>	<b>-8677</b>	<b>-8988</b>
<b>Total</b>		<b>59947</b>	<b>-6822</b>	<b>-6967</b>	<b>-6967</b>	<b>-7792</b>	<b>-8493</b>	<b>-9089</b>	<b>-9596</b>	<b>10026</b>	<b>10393</b>	<b>10731</b>

Option 4 Benefits	Assumption for projections	PV Benefits	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Updating and Screening Assessment	no longer completed	7179	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086	-1086
Progress Reports	no longer completed	2238	-339	-339	-339	-339	-339	-339	-339	-339	-339	-339
Detailed Assessment	no longer completed	1386	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210
Further Assessments	no longer completed	1817	-275	-275	-275	-275	-275	-275	-275	-275	-275	-275
Action Plan	no longer completed	1159	-175	-175	-175	-175	-175	-175	-175	-175	-175	-175
Making/Amending an AQMA	all revoked in year 1	1102	0	-145	-145	-145	-145	-145	-145	-145	-145	-145
Annual reporting	no longer completed	7170	-1085	-1085	-1085	-1085	-1085	-1085	-1085	-1085	-1085	-1085
<b>Sub-Total Reporting</b>		<b>22050</b>	<b>-3170</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>	<b>-3315</b>
Diffusion tube monitoring	ave £500 in 1-3, decline to zero in year 6	12682	-1555	-1555	-1555	-1721	-1888	-2055	-2055	-2055	-2055	-2055
Automatic monitoring	ave £3000 in 1-3, decline to zero in year 6	52087	-5696	-5696	-5696	-6696	-7696	-8696	-8696	-8696	-8696	-8696
<b>Sub-Total Monitoring</b>		<b>64769</b>	<b>-7251</b>	<b>-7251</b>	<b>-7251</b>	<b>-8418</b>	<b>-9584</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>	<b>10751</b>
<b>Total</b>		<b>86819</b>	<b>10421</b>	<b>10566</b>	<b>10566</b>	<b>11733</b>	<b>12899</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>	<b>14066</b>

## Notes

Cost savings are presented as benefits in this IA. Annual values are cost savings, hence negative; PV total emits the negative to reflect a benefit

Updating and Screening Assessment (includes officer time costs and contractor costs to produce an updating and screening assessment every 3 years by 310 local authorities in Option 1 and 2. No updating and screening assessments are produced in Option 3 and 4))

Progress reports (includes officer time costs and contractor costs to produce an annual progress report assuming 310 are produced each year in Option 1, 2 and 3 and none are produced in Option 4)

Detailed Assessment (includes officer time costs and contractor costs to produce a detailed assessment assuming a total of 50 are produced each year in Option 1)

Further Assessment (includes officer time costs and contractor costs to produce a further assessment assuming a total of 50 are produced each year in Option 1)

Action Plan (includes officer time costs and contractor costs to produce an action plan assuming 40 are produced each year in Option 1,2 and 3)

Making/amending an AQMA (includes officer time costs to make or amend the legal Air Quality Management Area order)

Diffusion tube monitoring (includes officer time costs for site visits and laboratory costs in monitoring NO<sub>2</sub> via diffusion tubes assuming on average a local authority has 30 diffusion tube monitoring sites)

Automatic monitoring (includes officer time costs and annual contractor maintenance costs assuming there are 600 non-AURN sites in Option 1, all of which have NO<sub>x</sub> analysers and 150 have PM<sub>10</sub> analysers)