

NSCA response to the consultation on the review of the air quality strategy

The National Society for Clean Air and Environmental Protection (NSCA) brings together organisations across the public, private and voluntary sectors to promote a balanced and innovative approach to understanding and solving environmental problems. We are a registered charity with over 100 years experience of policy formulation, environmental campaigning, public information provision and production of educational resources. We are active in the fields of climate change, air quality, noise, land quality, local environment management, and industrial regulation (www.nasca.org.uk).

NSCA welcomes the opportunity to comment on the results of the Government's review of the Air Quality Strategy. We are gratified that the review is more action orientated than previous iterations. The detailed assessment of air quality trends, baseline predictions and future measures is a considerable technical achievement and provides a strong evidence base, which highlights both the ongoing and serious impacts of air pollution, and also opportunities for cost effective action in response. The innovative proposal for the introduction of an exposure-reduction regime for PM_{2.5} is very welcome, as are the tentative steps made on integration of such issues as climate change, and across sectors such as transport, aviation and agriculture. The consideration of ecosystems and impacts on vegetation is important as well. Defra have shown commendable commitment to participation and stakeholder engagement throughout the review process and the transparency and openness, by which the process has been pursued, is very welcome.

NSCA remain deeply concerned by the impacts of air pollution across all sectors of the population, and particularly for more sensitive individuals and for those who have no choice but to live and work in areas where pollution levels are highest. Ecosystem impacts need to be taken seriously as well with, for example, over half of the UK's sensitive habitats predicted to experience excessive nutrient loads, even by 2010. We believe that the supported measures proposed in the review can bring important benefits, but are disappointed by the relatively limited scope of these proposals. We believe that much more can be achieved.

Air quality is a mature policy field. Many improvements have been made over the years yet much work remains. Continued benefits *via* traditional approaches are progressively more difficult to achieve. Consequently, strong resolve is required by government to maintain the pressure and drive further improvement to the atmospheric environment. Traditional technical measures can still deliver important cost effective benefits. In addition more innovative action is required, to stimulate both system transformation and behaviour change. We would like to see Defra take a more proactive development role, with regards to mitigation and measures.

It is also vital to have strong objectives in place. It is important that we retain existing air quality objectives and that government sets out clearly within the final strategy, when these will be achieved and by what measures. The exposure reduction approach is a useful proposal, but will only work if it is ambitious and binding. The UK is well placed to lead Europe by helping to demonstrate just how effective this mechanism can be.

Overall, the review contributes well to the debate, providing a useful evidence base and new proposals. Following the consultation, a more comprehensive and strategic statement of government policy and future intent is required in the form of a full strategy document.

In particular, we suggest that this includes commitment to a long term vision for UK air quality, a more detailed treatment of important policy linkages (e.g. with climate change) and greater emphasis on sectoral influence and action (e.g. transport, aviation, agriculture and planning). The strategy needs also to recognise and give greater support to action at local and regional levels. Finally, it needs to identify more concrete action, for example explicit implementation mechanisms, for the supported measures. It is, perhaps, a shame that these varied considerations were not addressed more fully under the present consultation.

Our full response identifies a number of specific recommendations. These are highlighted through the text and also listed together on pages 17 and 18. Suggestions include:

- Retain existing air quality objectives and for the government to set out clearly within the strategy, when these will be achieved and by what measures.
- Support for an ambitious and binding PM_{2.5} exposure-reduction framework for the UK, setting a 20ugm⁻³ exposure cap, to be achieved by 2010, and a 20% reduction objective for 2020.
- Proposal to update relevant guidance (e.g. PPS 23) to ensure that reducing population exposure to particle pollution provides a strong driver at local and regional levels.
- Support for an expanded list of measures, including both technical and non-technical options.
- Greater recognition of and commitment to the local and regional contribution to managing air quality through the final strategy, combined with a stronger role for central government in ensuring that key schemes and initiatives gain political support and are adequately resourced.
- A more vigorous approach to linking up air quality and climate change at local, regional and national level.
- More substantial commitments on protecting ecosystems and reducing agricultural emissions, supported by the setting up of a 'terrestrial effects' network, to monitor impacts and chart progress.

We appreciate the opportunity to take part in this consultation and hope that our comments are both helpful and constructive. Questions or comments should be directed to Rob Pilling (NSCA), by telephone (01273 878779) or by email (RPilling@nsca.org.uk)

NSCA, 10th July 2006

Detailed Response to Consultation Questions

Please Note: The first digit of question number refers to the chapter, in which it appears in the consultation document. The second digit has been added sequentially as an aid for reference.

Q1.1 Vision and Scope (Chapter 1, p25)

Are you satisfied with the scope and vision for this review summarised in Chapter 1? If not, what improvement would you like to see.

The review identifies three aims for the Air Quality Strategy. Chiefly, to map out current and future AQ policy, provide best practicable health and environment protection and describe the air pollution climate in the UK. These are appropriate and provide a clear frame of reference. The added focus on evidence & innovation and horizon scanning add further important dimensions.

Recommendation 1: The review document is an important contribution, providing a useful evidence base and important proposals. Following the consultation, a more comprehensive and strategic statement of government policy and future intent is required, replacing the existing air quality strategy (recommendations 2-8 elaborate further).

Need for a driving vision for air quality in the UK

The AQS should provide a coherent and challenging long-term vision for air quality in the UK. We feel that this is lacking from the review. The document also fails to reflect commitments made at European level to strategic objectives, stemming from the 6EAP, the Café process and the thematic strategy.

The failure to identify a driving vision is reflected in the structure of the report. While chapter 2 examines current air quality trends and presents business as usual projections, chapter 3 skips straight to the assessment of proposed additional measures. The intermediate step of considering 'where we want to be' is omitted entirely. Without this view, nsca are concerned that air quality planning will become solely a process of assessing potential emissions measures, approved or otherwise on the basis of cost-benefit analysis. Retaining and committing to an ambitious overarching vision for air quality in the UK will help retain the integrity of the outcomes based air quality policy framework, which has been constructed over recent years.

It is also important that the strategy reflects the pursuit of efficient and equitable measures to reduce air pollution. Special consideration should be given to protecting those, who are particularly sensitive and also in ensuring that the wider impacts do not fall disproportionately on specific areas and communities - in particular those where social deprivation and exclusion exists

Finally, the strategy should make links directly to the governments sustainable development strategy, recognising the desire for cleaner air as just one important driver of the fundamental societal shift, which is required in moving towards sustainability. With this regard, enhancing links with action on climate change is a theme developed later in this submission (Q6.1).

Recommendation 2: Insert an additional section, which describes the UK's Air Quality vision. This should include a commitment: *"To ensure that everyone can enjoy a level of ambient air quality in public places, which poses no significant risk to health or quality of life and to ensure that vegetation and ecosystems are protected from significant harm as a result of air pollution"*. It should also make clear that The strategy provides *"a long-term strategic and integrated policy to protect against the effects of air pollution on human health and the environment"* and that it aims for *"a high level of environmental protection, based on a clear set of policy principles"*. The principles referred to should also be laid out and include commitment to the 'precautionary approach' and 'polluter pays'. This vision must be realistic as well as ambitious. Reference to practicability, costs, benefits and social factors are appropriate, though such issues are already well addressed under the present review.

Limited cross sector integration and influence

The main thrust of the report reflects an approach, where objectives are identified and isolated response measures are considered. Little focus is given to implementation mechanisms, or to the integration of air quality thinking across the sectors. Some steps in this direction have been made and these are welcome with sections on climate change, agriculture and aviation. These sections are however limited in depth, contain few concrete proposals and provide little evidence as to how air quality concerns are influencing these agenda.

Transport is a key sector, and recent developments, such as the failure to consider environmental concerns in the development of road user charging proposals and the dropping of clean transport grant schemes, suggest that integration in the road transport sector is weak. Aviation provides further concern. In contrast to good transparency and engagement throughout the development of this review, the work surrounding the assessment of air quality scenario's for Heathrow are lacking transparency and meaningful opportunities for engagement are limited.

Recommendation 3: The final strategy should provide a more detailed treatment of important policy linkages (e.g. with climate change) and greater emphasis on sectoral influence and action (e.g. transport, aviation, agriculture and planning).

Systemic and Behavioural Measures

NSCA welcomes the emphasis given to identifying measures for delivery. This helps to ensure that the strategy remains realistic and grounded in practical action. One concern, which we have raised repeatedly, is that the scope of these measures is too restricted. The overwhelming emphasis of the analysis in terms of measures selected and the relative depth of assessment sits with end of pipe fixes.

These measures are important and pressure must be maintained to drive innovation in the technical arena, but greater emphasis should be placed upon systemic and behavioural change. The steps, which the review takes in this direction are welcome, in particular the inclusion of the 'smarter choices' package and the road user charging scheme. Also, efforts to demonstrate joined up thinking on air quality and climate change are encouraging. However, they are too timid and more is required. Comments on specific measures are developed in response to Q3.1 to Q3.3.

Recommendation 4: Instigate '*a further review of systemic and behavioural measures for emissions reduction.*' The review should identify a range of innovative measures and build future scenarios. It should be integrated with work on climate change, quantifying potential emissions reductions and air quality benefits. It needs also to identify both cost and non-cost barriers to implementation and consider ways of overcoming them.

Plan for Implementation

The technical assessment of measures is far more developed than the policy mechanisms by which they will be implemented. This is particularly important for clean fleet proposals, where strong levers will be required. Even where implementation routes exist, funding and resource present significant barriers to achieving the targeted improvements. This is true for national, regional and local action. Central government must take greater responsibility for ensuring that adequate resources are available. A particular concern remains the funding of action plan measures. Specifically with regards to ensuring high intensity smarter choices, supported by harder measures to lock in the benefits. A second key area is that of 'major local/regional level initiatives' (such as low emission zones and strategies), which are struggling to progress under the current system. (see also comments on specific measures in response to Q3.1 and Q3.3)

Recommendation 5: Elaborate on policy mechanisms, by which proposed measures will be achieved. Take greater responsibility for ensuring viable funding and resource paths for implementation, especially for local/regional action plans and schemes.

Risk and Uncertainty

The assessments and projections are based on the best available knowledge. However, it would be prudent to consider alternative scenarios, for example, where technological solutions do not deliver as anticipated, or where consumer/societal trends impact detrimentally upon air quality. One, historic, example of technology failing to deliver occurred during the switch from Euro I to Euro II. Anticipated benefits did not fully materialise (in this case, largely as a consequence of Euro I technology exceeding anticipated performance standards).

Present concerns include:

- Slower than expected reduction in concentrations of NO₂ at background sites and even increases at roadside. These are believed to be associated with changes in after-treatment technologies. Increasing fleet dieselisation may also play a role.
- Proposals for greater biomass burning and implications for air quality
- Uncertainties over future energy baselines (e.g. increased use of coal)

Chapter 2 addresses some of these issues in terms of uncertainties, however it fails to explain how the associated risks are to be further investigated, managed and addressed. The links with relevant sections of chapter 5 help to resolve this concern, but the implications should be further elucidated in chapter 2.

Recommendation 6: Include in chapter 2 a summary of important uncertainties and threats to achieving predicted air quality improvements. Accompany, this with an outline of the government's strategy for investigating and managing these risks.

Participatory approaches

We welcome ongoing efforts to engage with stakeholders on air quality. NSCA were very happy to work with Government in organising the recent workshop in support of the consultation process and very pleased with the outcomes. We feel that the greatest value lay in raising the profile of the review and lifting the lid on what is a very complex and detailed study. Inevitably with such a large number of people involved, the opportunity for direct participation is reduced. It is also very difficult to ensure that a balanced view emerges and that everybody is able to have their say. Consequently, while we are keen that Defra take note of the emergent messages, it is also clear that formal submissions are the most important component of the consultation process.

Recommendation 7: Defra may wish to review how to balance the twin aims of wide-engagement and more detailed active participation. Perhaps, a number of smaller, more focussed workshops would be a useful addition to the armoury. In light of the complexity and long delays associated with the present review, they may also want to consider biting off smaller chunks in a rolling process.

The Local and regional dimension

Over recent years, NSCA has championed the role of local authorities in air quality management. And indeed many of our members are drawn from this sector. It is very disappointing that a more detailed treatment of the local contribution could not be incorporated into the review. Similar concerns dominated the recent stakeholder event held by Defra in support of this consultation. The final strategy should give further consideration to the local and regional dimension.

We recognise that the changing nature of air pollution requires strong national and international action. At the same time, the local and regional contribution remains vital in terms of helping to reducing overall emissions, in managing local scale pollution and in helping to inform and protect the public. This role will remain important for the foreseeable future. The LAQM regime is rapidly maturing and its introduction has led to a major development of capacity, expertise and knowledge within local authorities. There must be clear commitment

and support from central government to maintain and enhance these efforts. It is vital that action at different spatial scales remains well connected and interlinked.

The value of review and assessment must also not be understated. This has resulted in the detailed identification and understanding of the UK's air quality problems. Valuable data has been and continues to be generated. Further efforts are required to manage this in the most appropriate manner to ensure maximum access and utilisation.

Elsewhere in this response, we comment regarding the need for greater support in the implementation of AQAPs, smarter choices, low emission zones and low emission strategies. We also reflect on the need to ensure that exposure reduction thinking permeates all levels and to optimise the co-management of air quality and climate change at the local level (See Q1.1, Q4.3.2, Q6.1, Q3.1 (iii) and Q3.3 (vi)).

As wider area initiatives become more important, better links are also required at the regional and sub-regional level. Similarly the growing importance of regional strategic processes means that this dimension must take air quality fully into account.

Recommendation 8: Include in the final strategy a greater recognition of and commitment to the local and regional contribution. Commit to a stronger role for central government in ensuring that key schemes and initiatives gain political support and are adequately resourced.

Q2.1 Assessment and projection of pollutants (Chapter 2, p66)

Do you agree with the assessment and projections presented for the pollutants in the Air Quality Strategy? If not, could you provide specific examples and reasoning.

The assessments and projections are based on the best available knowledge.

Q3.1 Additional policy measures (Chapter 3, p98)

What policy measures in addition to those addressed in Chapter 3 do you think the UK Government and the devolved administrations should assess? Please specify why.

Following COMEAP's reappraisal of particle health risk factors, the headline health impacts of air pollution in the UK are now in-line with earlier European assessments. By the nature of cost benefit analysis it is easy to focus heavily on mortality effects, but it is also important to remember the range of health and quality of life effects, which underlie these figures. Overall, the statistics are really quite staggering.

Against this background we might expect a powerful and extensive list of new measures and action to emerge. Sadly this is not the case – if fully implemented the package of preferred measures (chapter 3, para 116) will provide an important, cost-efficient, but relatively modest gain in life expectancy. Additional benefits may be gained by the other measures considered in the review (para 117 and 118). Even so, it is clear that significant health and environmental impacts will remain even by 2020. Further policy measures must be identified and assessed, and with some urgency.

Additional options for further technical solutions must be kept under review, particularly in the form of future vehicle standards and further tightening of controls on industrial emissions. However, we believe that the most attractive area for immediate analysis is for non-technical measures. Policies, which impact on the overall system and, which influence the behaviour of organisations and of individuals (see recommendation 2). We urge government to give serious attention to the following opportunities:

- (i) Environmentally optimised road user charging: optimised for environmental benefits, including both air quality and climate change. This should include both local and national schemes. NSCA are not convinced by arguments over sequential implementation, focussing primarily on congestion in the first phase. Technological options exist to address environmental impacts in parallel. We recognise the significant political hurdles to be overcome, but also emphasise the leadership responsibility of government in overcoming such difficulties.

- (ii) Pay as you drive: In the absence of an environmentally optimised road user charging scheme, then alternative environmental management regimes should be developed. One example is the 'Pay as you drive' (PAYD) scheme, proposed at the recent LowCVP conference 'Meeting the Low Carbon Challenge' (papers available at www.lowcvp.org.uk). In addition to the carbon benefits presented, the air quality emission benefits would be considerable.
- (iii) Low emission zones and strategies: Greater development and support for local and regional traffic management strategies, which incorporate concepts such as low emission zones or for example, studies in Leeds, which indicate that significant benefits are possible by optimising the flow of traffic within the city. A group of Local Authorities have recently set up a Low emission strategies forum – this proactive group should be supported and assisted by central government.
- (iv) Fiscal incentives for fleet transformation: There is an urgent need for fiscal instruments, which better reflect the true social and environmental costs of transport. These will be most effective if they combine a carrot and stick approach. Innovative schemes such as the 'Feebate' concept, where dis-incentives for polluting behaviour, finance incentives for less polluting behaviour, can enable cost neutrality. Potential social impacts should be considered and managed, rather than used as justification for inaction. Also, environmental outcomes must be robust across the full vehicle life-cycle.
- (v) Energy Efficiency: Measures to improve energy efficiency in the public, private and domestic sectors will reduce both air quality and climate change pollutants.
- (vi) Demand Management / Behaviour change: Simply doing less, travelling less and consuming less is the most environmentally sustainable action, which as a society, we can collectively make. Some perceive this to be a challenge to the desire for growth and a better quality of life for all. However, by shifting our emphasis away from quantity of consumption to quality of experience, environmental burdens, including emissions to air, can be dramatically reduced.

Recommendation 9: Give further serious consideration to opportunities surrounding environmentally optimised road user charging (and related transport schemes), low emission zones and strategies, fiscal incentives for fleet transformation, energy efficiency, demand management and behaviour change.

Ammonia Emissions

Ammonia deposition is an important concern and additional policy measures are required to reduce the impacts. We recognise that such measures are logically addressed through a multi-media approach. However, this must be closely linked to the air quality strategy.

Recommendation 10: The revised strategy should include a summary of potential policy options and measures to reduce ammonia emissions. The benefits should be assessed in the same framework as other air quality measures and their relative attractiveness should feedback and influence decisions made within any wider multi-media strategy.

Q3.2 Assessment of proposed measures (Chapter 3, p98)

What are your views on the assessments carried out? Do you agree that: monetary cost and benefits (including impacts on public health); impact on ecosystems and habitats; impact on exceedences of objectives; and qualitative assessments, are the right criteria to be considering? Please state your reasoning.

NSCA recognise the considerable technical achievement in bringing together the review. The body of evidence provides an impressive basis for assessing the short list of measures. The four-strand approach provides an appropriate framework for assessment. The RAG tables helpfully summarise the results and makes them more accessible and understandable. However, it is apparent that CBA dominates the assessment.

Excluded benefits and historically underestimated ex-ante costs mean that CBA is demonstrably a conservative methodology. Over reliance on this approach places the burden of proof too heavily upon the justification for action, without adequately reflecting the inherent costs of weak ambition or delay. A better balance is required between the risk of taking action, which fails to fully deliver efficient benefits and failing to take action, which could deliver efficient benefits. This needs to be reflected in the interpretation of CBA results.

It is also noteworthy, that relatively few of the measures assessed are directly within the control of the UK government. Clearly, it is important to include international measures in the analysis and more so for the UK to play its part in the ensuing negotiations. At the same time, a national air quality strategy should provide a clear focus on national level action. In this respect, the list of preferred 'domestic' measures is considerably shorter. A greater distinction should be made between domestic measures, over which the government retains full control and accountability and international action, in which the government is just one actor amongst many.

Similarly, it would appear that near term measures such as Retro-fit and LEZ schemes lose out in CBA. We suspect that this relates to time-scale effects and possibly also to the approach taken on discounting future costs/benefits. Further un-picking and investigation of these concerns is needed. We welcome the recognition that ex-ante costs have been consistently over estimated in the past, but are disappointed that there appears no effort to account for this in future predictions.

Finally, our members have commented on the fact that the continued dominance of and almost sole reliance on CBA, risks losing sight of the intrinsic value of safe guarding the environment and of society's moral duty to protect even the most sensitive individuals from harmful effects.

Q3.3 Which measures to support (Chapter 3, p98)

Which of the additional policy measures assessed in this Chapter, if any, do you think the UK Government and the devolved administrations should implement or argue for in relevant fora? Please specify why.

The assessment process sets a high bar, (see response to Q3.2), this provides a strong evidence base, indicating cost effective benefits for the preferred measures (Chapter 3, para 116). These are important and should be progressed. In addition, the following measures also show potential and should be supported:

- (i) Euro-standards (high) intensity (measure B): The high intensity Euro option although considered an 'amber' measure in the review, indicates a good cost-benefit balance, when the COMEAP recommendations on the most probable (short) time lag for particle health impacts are taken into account. The historic trend for over-estimating technology cost further suggests the attractiveness of this measure. Consequently, we believe that more aggressive vehicle NOx standards should be pursued
- (ii) Early Adoption of Euro-Standards: is an attractive option, providing important benefits. The timing of this measure is key and delays will reduce the impact. The strategy needs to identify concrete mechanisms, by which the early adoption will be achieved.
- (iii) Industrial measures: analysis presented for K1 and K2 (industrial plant) reveal that emissions reductions in this sector still have the potential to provide significant health and environmental benefits. Again, taking notice of Comeap's advice that the time lag effect (PM) is likely to be shorter rather than longer, suggests that K1 is likely to be cost effective in CBA terms. K2 while, less attractive on this basis, has the potential to provide significant benefits for ecosystems, which are excluded. Consequently, this option should also be actively pursued. NSCA understand that there may be practical hurdles. If so, these should be highlighted and concrete options for implementation considered.

- (iv) Smarter Choices: We welcome the inclusion of the so-called "smarter choices" into the Strategy. It is important that sufficient emphasis is given to implement and support them. We believe that this will require the full participation of local government action, and we expect that due consideration be given to the implementation of local air quality management and action planning. Related research clearly shows that smarter choices are only properly effective if adequately resourced and accompanied with harder action to lock in the benefits. Government must take a lead role in ensuring that these resources are accessible.
- (v) Speed limits (60 mph reduction): The analysis of the impact of reducing motorway speed limits to 60 mph is important, though its depth is disappointing:
- Limited supporting data was provided and there was no mention of the 70mph enforcement case, which has also been assessed by DfT.
 - Little consideration was given to the potential CO2 benefits, despite these being significant, even when compared to those predicted for the Renewable Transport Fuel Obligation (RTFO), which is the only major national transport measure currently under consideration within the revised climate change programme.
 - In air quality terms, the benefits are also significant, especially when compared to other measures included in the AQS review. Importantly, these are benefits, which are achievable domestically and in the short term.
 - NSCA question the validity of allowing time costs to outweigh such significant climate, air quality and safety benefits.
 - We do not believe that adequate consideration has been given to devising economically viable and politically acceptable implementation mechanisms, particularly with regards to stricter enforcement of existing speed limits.

We support: (i) Stricter enforcement of speed limits across the UK, explicitly on the basis of the multiple environmental and social benefits, (ii) Further local and regional speed management initiatives, and (iii) A more detailed analysis of benefits, costs and implementation options for speed management as a component of eco-driving in the UK.

- (vi) Fleet Retrofit: The negative cost-benefit ratio for retro-fitting of particulate filters is disappointing. Similar analysis in Sweden suggests a 2:1 cost benefit and in California a 10:1 ratio. The cause of this disparity may result from a number of small assumptions, which in combination shift the balance significantly. One factor is likely to be over-estimated technology costs. Other assumptions such as trap efficiency and vehicle life-times may also play a role. Further optimisation might be achieved by targeting fleets, which spend more time in urban locations. A key benefit of the retrofit option is that it can be achieved domestically and quickly. These advantages are lost in the headline analysis.
- (vii) Low emission zones: represent the most powerful and realistic near-term option for emissions reduction at local and regional level. Benefits are achievable independently of international developments. The national level cost-benefit assessment is complex. We suspect that discounting and time-frame effects conspire against the schemes. Further 'un-picking' of the analysis is justified. We welcome Defra's suggestion at the recent Stakeholder workshop, that irrespective of the national analysis, LEZ schemes can be attractive from the local and regional perspective. We are concerned however that progress will simply not occur without greater national level support and commitment. Finally, we note that even under the newly proposed Café directive, member states must still demonstrate they are taking all reasonable measures to achieve compliance with limit values.

Domestically, LEZ schemes and related measures represent one of (if not *the*) most important step, which can be taken.

Recommendation 11: Progress the preferred measures (Chapter 3, para 116), also support higher intensity NOx standards for vehicles, industrial measures K1 and K2, smarter choices speed management, fleet retrofit and Low emission zones

Q4.1 Retention of existing objectives (p114)

Do you agree that we should retain the existing objectives for nitrogen dioxide, particles (PM₁₀), ozone (for human health), polycyclic aromatic hydrocarbons, sulphur dioxide (for human health), lead, carbon monoxide, benzene, 1,3-butadiene?

NSCA support the retention of these existing objectives. Particles are a clear health priority. Nitrogen dioxide objectives are vital, following their recent reconfirmation by the World Health Authority and high levels of non-compliance. A third important objective is the SO₂ 15 min mean. Although, not required under EU legislation, this is well supported by impacts evidence and by EPAQS. NSCA strongly oppose any move to undermine it. The provisional status of the NO₂ objective creates unnecessary ambiguity and should be removed.

NSCA remains committed to the achievement of all AQOs (and limit values), and support all practicable action to achieve this as quickly as possible. The government should set out clearly within the strategy, when this will be achieved and by what measures.

We recognise the wide-spread concern amongst health professionals regarding the impacts of particles and reflect on the distance still to travel. The revised WHO recommendations for PM₁₀ and PM_{2.5} represent important long-term goals. We also recognise that significant benefits can be achieved through the implementation of a wide area exposure-reduction policy for PM_{2.5} and welcome this proposal.

Provided an ambitious and binding exposure-reduction regime is implemented, and steps are taken to ensure that 'exposure reduction thinking' permeates to all levels (see response to Q4.3.2), we accept the proposal to drop the provisional PM₁₀ (2010) objectives. Without these provisions in place, the move is premature.

Recommendation 12: NSCA remains committed to the retention and achievement of all existing AQOs (and limit values). We support all practicable action to achieve this as quickly as possible. The government should set out clearly within the strategy, when this will be achieved and by what measures.

4.2 Ecosystem objectives for NOx, SO₂ and ozone (Chapter 4, p114)

Do you agree to the proposed new objectives for oxides of nitrogen (NOx) and sulphur dioxide (SO₂) for the protection of ecosystems and vegetation in particular at designated sites? Do you agree to the proposed new objectives for ozone for the protection of ecosystems and vegetation?

Yes, we support these objectives, though are concerned that they do not appear very ambitious, since they do not require any additional action or measures. We suggest that 100% compliance for the NOx objective be considered for 2010.

Q4.3 Policy framework for particles (Chapter 4, p122, p125, p128)

Q4.3.1 Do you agree that we should begin to move the policy framework to include exposure reduction type of objectives for non-threshold pollutants such as particles? Please specify why.

NSCA strongly supports the proposal to move the policy framework to include exposure-reduction objectives for particles. We accept that the existing framework will inevitably focus attention towards the reduction of pollutant concentrations at "hot-spot" locations, and will not provide the optimum outcome for public health. We believe that it is important that the exposure-reduction approach be implemented in tandem with "backstop" objectives in order to maintain environmental equity for the UK population.

In order to reflect the serious health impacts, the status of the objectives is as important as their numerical value. Consequently, they should be introduced with full rather than provisional status. In practice, it is important that the objectives are seen to represent 'hard' targets.

Recommendation 13: Introduce exposure-reduction objectives for particles, in tandem with backstop objectives. These need to be hard rather than provisional objectives and the strategy should commit government: (i) to timely and effective action at all levels; (ii) to keep progress under review; and, if it appears that we are off target, (iii) to identify and implement further measures. Additional steps, such as including the new objectives as a PSA target, would help to demonstrate and ensure the necessary resolve.

Q4.3.2 What do you think the role of the devolved administrations and local authorities should be under this new framework?

NSCA believes that the new exposure-reduction framework should be implemented at the level of the devolved administrations, rather than at a UK level (see below). We agree that it would be impractical to implement the approach at the local authority level, and we would not propose that exposure reduction objectives be included within the LAQM process.

However, we believe that local authorities have an important role to play in delivering a reduction in exposure to PM. One potential route would be via the planning and development control system, for example by ensuring that mitigation measures to reduce PM emissions are considered and required for all new development schemes. To ensure that this is effectively implemented, we urge Government to consider appropriate amendments to PPS23. Further consideration is also required to encourage consideration of exposure-reduction in local transport planning and through regional level strategic processes and initiatives.

It should be recognised that dropping the PM (2010) objective has important implications at local and regional level. There is a risk that this would weaken or remove altogether drivers to reduce particle pollution through LAQM. Weaker limit values also increase the risk of localised background creep. These concerns reinforce the need for exposure-reduction to be taken into consideration at all levels (see also response to Q.4.1).

The regional contribution is also important. It is felt that this has been over-looked in the strategy review. Greater emphasis is required and further consideration is needed as to how regional level processes take air quality into account and actively promote reduced emissions and cleaner air.

Recommendation 14: Strengthen paragraph 112, so that it: (i) '*strongly encourages*' authorities '*to consider measures that reduce concentrations of non-threshold pollutants such as particles, at any concentration, across their whole areas, not just for areas of AQO exceedence.*' (ii) Identifies spatial and transport planning as priority local/regional level processes for reducing population exposure to particles (iii) Signals the intention to make appropriate amendments to statutory guidance for local air quality management, and local/regional spatial and transport planning regimes (especially PPS 23).

Q4.3.3 Do you agree that the exposure reduction approach should be pursued at a UK level first and that the possibility of moving to a devolved administration level should be considered at a later stage? Please specify why.

NSCA believes that it would be preferable to implement the new exposure reduction approach at the level of the devolved administrations. There is a strong PM_{2.5} gradient across the UK from the north to the south - there is therefore a potential to introduce different exposure reduction targets to better reflect the different PM composition and background contributions within the devolved administrations.

Recommendation 15: implement the new exposure reduction approach at the level of the devolved administrations.

Q4.3.4 What are your views on moving the policy framework to include PM_{2.5} as well as PM₁₀?

NSCA welcomes the introduction of objectives for PM_{2.5} as well as those for PM₁₀. The studies undertaken by WHO have shown increasing evidence that it is the finer fraction of PM that is responsible for the human health impacts.

However, NSCA is strongly of the opinion that the existing annual mean and daily mean PM₁₀ objectives should be retained. WHO advice is that health impacts from the coarse fraction of PM cannot be discounted. Further, we believe that it is essential to retain a short-term objective for PM₁₀ to provide adequate protection to health. Whilst empirical relationships have been developed between the annual mean and daily mean concentrations, there is potential that such relationships may alter in the future as the PM source contributions change.

Recommendation 16: Introduce new objectives for PM_{2.5} and retain objectives for PM₁₀

Q4.3.5 Should the UK Government and the devolved administrations wait until a European exposure reduction objective is finally agreed in Europe before adopting a new national objective for particles?, or Should the UK Government and the devolved administrations adopt new exposure reduction and concentration cap objectives for PM_{2.5} now and review them after final agreement has been reached in Europe?

NSCA believes that the UK Government and the devolved administrations should adopt new exposure reduction and concentration cap objectives for PM_{2.5} at the earliest opportunity. Whilst the outcome of the debate on the CAFÉ Directive will eventually need to be implemented within UK legislation, NSCA urges the UK Government and the devolved administrations to set challenging objectives for PM_{2.5} in order to provide adequate protection for human health.

Recommendation 17: Adopt new exposure reduction and concentration cap objectives for PM_{2.5} at the earliest opportunity.

Q4.3.6 If the UK Government and the devolved administrations proceed now with the proposals for a new long term particle objectives, set out in Chapter 4, do you consider that the proposed values of a 15% exposure reduction objective and a 25µg.m-3 concentration cap objective (12µg.m-3 for Scotland) are reasonable?

In light of the strong evidence base showing significant health impacts of particles, it is vital that the objectives are both challenging and credible. They must be challenging so that they drive innovation in policy, practice and technology. They must be credible, so that when difficult decisions need to be made, they are not simply replaced with more convenient metrics. A target, which reflects the business as usual case cannot be considered to be challenging. A target, which reflects the application of 'best current measures' is also lacking in ambition, as it fails to provide strong drivers for innovation.

Empirical relationships suggest that the 2005 daily PM₁₀ objective is roughly equivalent to an annual mean value of around 32 $\mu\text{g m}^{-3}$. Assuming a PM_{2.5}/PM₁₀ ratio of approx 0.6-0.7 this equates to a PM_{2.5} limit of around 19-22 $\mu\text{g m}^{-3}$. A cap of 25 is clearly very weak.

The Government's second RIA on the Café Directive suggests that a reduction target of 18% is consistent with preferred measures identified in the review, also that a lower cap is achievable. NSCA believe even stronger action is both possible and desirable (see Q3.1-3.3). We also believe that targets should be set so as to drive action, rather than simply to bound expectations. A more stringent target is therefore required.

See also comments in 4.3.1 regarding the importance of the status of objectives as well as their numerical values.

Recommendation 18: Set cap and reduction objectives as 20 $\mu\text{g m}^{-3}$ (2010) and 20% (2020) respectively.

Q4.4 Critical loads – acidification and nitrification (Chapter 4, p130, p131)

Q4.4.1 Do you agree with the policy position on critical loads set out in section 4.5.1 of Chapter 4? In particular, should the UK Government and the devolved administrations adopt a numerical target for the reduction of critical load exceedences for acidity and nitrogen nutrient in addition to the long term goal of removing exceedences of critical loads? If so, please state why

We support the aim of eliminating critical load exceedences in the long term. With around half the UK's sensitive habitats still experiencing excessive loads by 2010, a lot more effort is required.

Recommendation 19: Set interim targets for reducing critical load exceedences as soon as possible. These should be set so as to drive action, not simply to bound expectations.

Q4.4.2 Do you agree with the policy position set out in section 4.5.2 of Chapter 4? In particular, do you consider the critical level of 8 $\mu\text{mg/m}^3$ for ammonia measured as an annual mean, to be useful in protecting Natura 2000 sites, and is it appropriate for use in the setting of conditions for permits under Pollution Prevention Control?

We support new objectives and believe that the critical level for ammonia should be used in the setting of conditions under PPC. It should also apply for sensitive sites affected by non-PPC activities.

Recommendation 20: The critical level for ammonia should be used in the setting of conditions under PPC.

Q4.4.3 Should the UK Government and the devolved administrations adopt an air quality objective for gaseous ammonia? If so, please state why.

Q4.5 Better regulation (Chapter 4, p135)

Do you agree that the better regulation and simplification proposals will result in reductions in burdens for businesses? What better regulation measures should be considered?

NSCA supports effective and efficient regulation, which reflects the need for society to operate within environmental limits. The assessment presented in the review provides strong evidence of the costs and impacts of air pollution. It also provides robust support for a number of additional measures. Our response to Q3.2, indicates reservations with regards to the assessment process, which presents too high a hurdle for potential measures, so as to risk 'inefficient in-action.' These concerns are not adequately represented in the 'Better Regulation' debate, which inevitably leads to weak ambition and delayed action.

Q5.1 Evidence and innovation (Chapter 5, p160)

How should Defra and the devolved administrations take forward their evidence and innovation needs? Are all the key areas where evidence is required covered? What are the priorities for further work?

Action-focused development work

Section 5.3.5.2 refers to making policies more effective, but says little on assessing new policy options and new technologies, nor on stimulating their development and implementation. In the UK, this work currently appears to sit with sectoral departments, where commitment to reducing air pollution is weaker. By contrast, in other countries environment departments are more action-focused in their development work.

It is a specific concern that DEFRA appears to rely entirely on DfT's advice, regarding possible future transport measures. Greater innovation and influence needs to stem directly from Defra and a coherent R&D programme is required to support this.

See also response to Q1.1 (Systemic and Behavioural Measures), Q3.1, Q3.3 and Q6.1

Terrestrial effects

The inclusion of impacts on ecosystems and vegetation is very welcome in this review. However, limited new measures have been proposed, which specifically target these problems and the dominant assessment methodology (CBA) fails to take the impacts properly into account. These limitations should to be addressed through evidence and innovation work.

A 'terrestrial effects' network should be developed, measuring air-pollutant impacts on ecosystems. The network should build on existing monitoring activities and provide the evidence base for policy assessment and decision-making. The network is particularly important in developing a better understanding of the interactions between climate change and atmospheric pollutants in relation to ecosystem functions and impacts.

Recommendation 21: More substantial commitments are required to protect ecosystems. These efforts would be well supported by the setting up of a 'terrestrial effects' network, to monitor impacts and chart progress.

Q6.1 Air Quality and Climate Change (Chapter 6, p171)

Do you agree that the UK Government and the devolved administrations should design policies to ensure the optimal improvements for both air quality and greenhouse gases (climate change)?

Yes, we agree to this approach. However, the key questions are what does this mean? and is it happening? Recent efforts to demonstrate joined up thinking on air quality and climate change are encouraging and welcome. However, a more vigorous approach is required. NSCA accept and support that in the short term there may be a carbon cost associated with necessary measures to improve air quality. We also firmly believe that in the medium to long term measures to reduce GHG emissions and air quality pollutants will converge, providing mutual benefits.

Important links between air quality and climate change are being downplayed

We are concerned at the lack of new ideas presented in the report with regard to linking action on air quality and climate change. The overall tone is play down the issue:

(i) While the review identifies that "*the key driving forces behind climate change and poor air quality are similar, e.g. economic growth, consumption, production process and demography. They share many emissions sources, so any abatement strategy will impact on both*", it fails to reflect this in any substantial way. The casual conclusion that short term trade-offs are unavoidable and justified is not supported by discussion. Similarly, there appears no plan to stimulate greater policy integration in the medium and longer term.

(ii) It may be that *"the air quality benefits of the CCPR measures are small compared to the benefits of some of the specific air quality measures identified in this review"*. Though since the CCP is focussed primarily on action out to 2010, this is not surprising. We believe that climate and energy policy over the period 2010-2020 has significant implications for air quality. In this context, the conclusions regarding the CCP, say more about its own ambition, than it does about potential air quality benefits resulting from options such as fuel substitution, energy efficiency and behaviour change.

(iii) Section 5.3.1.9 identifies the linkages and emphasises the differences between the two issues. However it fails to reflect on their growing convergence. On the one hand GHG emission targets and carbon accounting are becoming more important at national, regional and even local levels. The focus of action on air quality is moving up from being a local concern towards national and international scales. This implies that there are growing opportunities for interaction. More detailed consideration should be given to the policy implication of this changing landscape.

Air Quality is not the strongest driver for reducing emissions to air

NSCA believes that air quality policy is at a cross-roads. For some time now traditional end of pipe fixes, though still important, are showing diminishing returns. By contrast, systemic and behavioural change offers greater hopes for further reductions. It is also increasingly apparent that air quality concerns, are no longer the most important driver for emission reduction. Climate change is now firmly established as the most pressing environmental concern of the age and at long last the political bandwagon has started to roll. The air quality strategy must recognise this and consequently address two additional challenges:

- (i) How to ensure that climate policy does not proceed to the detriment of air quality. Or, where trade off's do arise, to ensure that coherent and well-justified decisions are made.
- (ii) How to maximise the environmental benefit of climate driven policy with regards to achieving air quality gains.

The tentative step, where air quality and climate plans assess each other's policies is useful, but this twin track approach is slow and inefficient. It is our belief that in the 2010-2020 time period, significant improvements in air quality will be possible through policies ostensibly driven by the need to reduce GHG emissions, but optimised to enhance air quality. To achieve this it is vital that air quality thinking is not an add-on, but permeates right through the energy and climate debate.

The EEA has recently published a study considering the ancillary benefits of climate change policies. Detailed analysis indicates that air quality improvements associated with aggressive climate policies out to the 2020 and 2030 timescales can comfortably exceed the MTRF assessment performed under Café. This level of integrated analysis appears to be entirely lacking at UK level. Indeed, that the recent energy review consultation document does not mention air quality once, speaks volumes.

Responding to the AQEG study

We welcome the AQEG study and support many of its draft conclusions (see also NSCA consultation response, 17th March 2006). We are concerned as to the delay in publication of the final report. We feel it is important that the knowledge generated translates into joined up policies and action. Further technical work, which the report recommends is important, particularly understanding lifecycle emissions and improving both the basis and tools for assessment and decision making. This work should be used to fine tune policies as new knowledge emerges. However, it must not delay action and policy development in the short and medium term. We are concerned by the limited response to this study in the review. There is a vague commitment to *"develop our understanding of synergies and trade-off's..."* (chapter 5, para 50), but otherwise little indication as to how the government will respond.

National level policy development

In light of these different limitations, national level policymaking appears inadequately joined up. The inherent difficulties of interacting across multiple government departments seems to be compounded by poor linkages within Defra itself. NSCA challenge Defra to review their internal processes and organisation with a view to enhancing the co-management of the twin concerns. It would also appear logical that they should rest within the same ministerial portfolio. These steps would surely lead to more effective and influential policy making, as well as greater efficiency of organisation and delivery. The move would also set an important precedent for other departments and layers of government.

Local and regional action

We have specific concerns regarding the situation at local and regional level. The present regulatory regime is imbalanced and fails to address emerging priorities. It provides hard statutory limits and legislation on air quality pollutants (especially PM and NO₂) and weak (often voluntary) signals on GHG emissions. These inherent inconsistencies drive micro-management of selected issues, at the expense of fundamental system transformation. Stronger linkage of local (hot-spot driven) action on air quality with that on climate change, and indeed with wider-area air quality emissions reduction, is required.

An extreme example is that of local transport planning, where air quality is one of four shared priorities, but climate change is relegated as one of a multitude of (optional) quality of life concerns. Similarly, spatial planning has important implications for local air quality, personal exposure and lifestyle carbon intensity. Decisions, taken today, strongly influence local and regional emissions in the long term.

There are synergies to be gained by linking efforts to reduce emissions of air quality and climate pollutants. NSCA perceives great enthusiasm for this approach within local authorities – but a lack of tools, support and direction. This is a key area, which the air quality strategy should address.

More broadly, it must be recognised that at local and regional level both air quality and climate change compete (and often poorly) with a host of other political and legislative priorities. A coherent policy framework of obligations, guidance and support must be created and maintained. This is the only way to ensure that authorities take strong and appropriate action to reduce emissions at the local and regional level. It will also ensure a level playing field, by reducing opportunities for free loading and unfair (not to say unsustainable) competition between areas and regions. Thereby encouraging greater innovation and political courage.

Recommendation 22: The government should prepare a formal response to the (final) AQEG report on air quality and climate change by the end of 2006. As well as responding on the technical recommendations, this should explain in detail Defra's view of the strengths and weaknesses of current policies and practice at local, regional and national level with regard to co-management of air quality and climate change. It should also identify, what further steps need to be taken and outline a timetable for progression.

Q6.2 Internationalisation of air quality policies (Chapter 6, p171)

Do you agree that the geographical scope for air quality policies should expand beyond the UK and the rest of Europe?

Yes. Well integrated policies driving action at all levels: local/regional, national, EU and international are required. The international benefits of emission reductions made in the UK should be factored into the overall assessment.

Full List of Recommendations

Vision and Scope

1. The review document is an important contribution, providing a useful evidence base and important proposals. Following the consultation, a more comprehensive and strategic statement of government policy and future intent is required, replacing the existing air quality strategy (recommendations 2-8 elaborate further).
2. Insert an additional section, which describes the UK's Air Quality vision. This should include a commitment: *"To ensure that everyone can enjoy a level of ambient air quality in public places, which poses no significant risk to health or quality of life and to ensure that vegetation and ecosystems are protected from significant harm as a result of air pollution"*. It should also make clear that The strategy provides *"a long-term strategic and integrated policy to protect against the effects of air pollution on human health and the environment"* and that it aims for *"a high level of environmental protection, based on a clear set of policy principles"*. The principles referred to should also be laid out and include commitment to the 'precautionary approach' and 'polluter pays'. This vision must be realistic as well as ambitious. Reference to practicability, costs, benefits and social factors are appropriate, though such issues are already well addressed under the present review.
3. The final strategy should provide a more detailed treatment of important policy linkages (e.g. with climate change) and greater emphasis on sectoral influence and action (e.g. transport, aviation, agriculture and planning).
4. Instigate *'a further review of systemic and behavioural measures for emissions reduction.'* The review should identify a range of innovative measures and build future scenarios. It should be integrated with work on climate change, quantifying potential emissions reductions and air quality benefits. It needs also to identify both cost and non-cost barriers to implementation and consider ways of overcoming them.
5. Elaborate on policy mechanisms, by which proposed measures will be achieved. Take greater responsibility for ensuring viable funding and resource paths for implementation, especially for local/regional action plans and schemes.
6. Include in chapter 2 a summary of important uncertainties and threats to achieving predicted air quality improvements. Accompany, this with an outline of the government's strategy for investigating and managing these risks.
7. Defra may wish to review how to balance the twin aims of wide-engagement and more detailed active participation. Perhaps, a number of smaller, more focussed workshops would be a useful addition to the armoury. In light of the complexity and long delays associated with the present review, they may also want to consider biting off smaller chunks in a rolling process.
8. Include in the final strategy a greater recognition of and commitment to the local and regional contribution. Commit to a stronger role for central government in ensuring that key schemes and initiatives gain political support and are adequately resourced.

Measures

9. Give further serious consideration to opportunities surrounding environmentally optimised road user charging (and related transport schemes), low emission zones and strategies, fiscal incentives for fleet transformation, energy efficiency, demand management and behaviour change.
10. The revised strategy should include a summary of potential policy options and measures to reduce ammonia emissions. The benefits should be assessed in the same framework as other air quality measures and their relative attractiveness should feedback and influence decisions made within any wider multi-media strategy.

11. Progress the preferred measures (Chapter 3, para 116), also support higher intensity NO_x standards for vehicles, industrial measures K1 and K2, smarter choices speed management, fleet retrofit and Low emission zones

Health Objectives

12. NSCA remains committed to the retention and achievement of all existing AQOs (and limit values). We support all practicable action to achieve this as quickly as possible. The government should set out clearly within the strategy, when this will be achieved and by what measures.

13. Introduce exposure-reduction objectives for particles, in tandem with backstop objectives. These need to be hard rather than provisional objectives and the strategy should commit government: (i) to timely and effective action at all levels; (ii) to keep progress under review; and, if it appears that we are off target, (iii) to identify and implement further measures. Additional steps, such as including the new objectives as a PSA target, would help to demonstrate and ensure the necessary resolve.

14. Strengthen paragraph 112, so that it: (i) '*strongly encourages*' authorities '*to consider measures that reduce concentrations of non-threshold pollutants such as particles, at any concentration, across their whole areas, not just for areas of AQO exceedence.*' (ii) Identifies spatial and transport planning as priority local/regional level processes for reducing population exposure to particles (iii) Signals the intention to make appropriate amendments to statutory guidance for local air quality management, and local/regional spatial and transport planning regimes (especially PPS 23).

15. Implement the new exposure reduction approach at the level of the devolved administrations.

16. Introduce new objectives for PM_{2.5} and retain objectives for PM₁₀

17. Adopt new exposure reduction and concentration cap objectives for PM_{2.5} at the earliest opportunity.

18. Set cap and reduction objectives as 20 µg m⁻³ (2010) and 20% (2020) respectively.

Ecosystems

19. Set interim targets for reducing critical load exceedences as soon as possible. These should be set so as to drive action, not simply to bound expectations.

20. The critical level for ammonia should be used in the setting of conditions under PPC.

21. More substantial commitments are required to protect ecosystems. These efforts would be well supported by the setting up of a 'terrestrial effects' network, to monitor impacts and chart progress.

Climate Change

22. The government should prepare a formal response to the (final) AQEG report on air quality and climate change by the end of 2006. As well as responding on the technical recommendations, this should explain in detail Defra's view of the strengths and weaknesses of current policies and practice at local, regional and national level with regard to co-management of air quality and climate change. It should also identify, what further steps need to be taken and outline a timetable for progression.