

Cleaner Air for Scotland 2-

Draft Air Quality Strategy Consultation

October 2020

CLEANER AIR FOR SCOTLAND 2 draft consultation

Foreword

The air that we breathe is fundamental to human life and the quality of our environment. The quality of life lived is placed at both short and longer term risk by poor air quality. Despite the undoubted improvements in air quality over recent years, continued and systemic action will be required to ensure we are addressing known and emerging risks.

Scotland is generally performing well by UK, European and global comparison, with both ambient concentrations and mass emissions of the main air pollutants largely continuing to fall (with the notable exception of ammonia) as a result of actions taken to date, both nationally and internationally. More remains to be done though, not least as we better understand the impacts of air pollution on human health and the natural environment.

Since our original Cleaner Air For Scotland strategy was published, we have introduced some of the most ambitious legislation in the world to end Scotland's contribution to climate change by 2045; published our Environment Strategy which emphasises the fundamental role our natural environment plays in supporting a fairer, healthier, more inclusive society; updated our National Transport Strategy; and taken major steps to reform Scotland's planning system. To maximise the benefits from action to tackle poor air quality, it is essential that we build on the linkages with these and other key policies.

This draft strategy sets out the Scottish Government's proposals for delivering further air quality improvements over the next five years. All of this is necessary if we are to secure our vision of Scotland having the best air quality in Europe – a quality of air that aims to protect and enhance health, wellbeing and the environment.

The proposals in this consultation are built on the work of an independently-led review. I would like to place on record my thanks to Professor Campbell Gemmill and members of the steering group for the valuable advice and insight they provided through their work. I would also wish to recognise all those that contributed to the review, including members of the four supporting expert groups.

Roseanna Cunningham MSP
Cabinet Secretary for Environment, Climate Change and Land Reform

About this consultation

We are consulting on a draft strategy – Cleaner Air for Scotland 2 (CAFS 2) - intended to build on the achievements of the Scottish Government’s Cleaner Air for Scotland (CAFS) strategy, setting out the measures we will take to further improve air quality in Scotland.

The consultation is structured around 10 chapters which largely reflect the high level recommendations arising from the independently-led CAFS review undertaken between November 2018 and July 2019. There are questions at the end of each chapter which provide an opportunity for you to express your views.

The questions are posed in a way to accommodate both a general audience and stakeholders with specialist knowledge in certain policy areas. Due to the mix of questions and policies covered in this strategy, there is no requirement to input to every chapter in this consultation, or to provide answers for each consultation question.

In addition to gathering your views on the actions within CAFS 2, we are also consulting on the Strategic Environmental Assessment Environmental Report, Equalities Impact Assessment and Business and Regulatory Impact Assessment for the strategy. Questions to inform the development of these assessments are at the end of the consultation paper and your comments are welcomed.

We will use the responses to this consultation to help inform finalisation of the CAFS 2 strategy and the associated Equalities Impact Assessment and Business and Regulatory Impact Assessment.

Responding to this consultation

We are inviting responses to this consultation by 22 January 2021

Please respond to this consultation using the Scottish Government’s consultation hub, Citizen Space (<http://consult.gov.scot>). Access and respond to this consultation online at <https://consult.gov.scot/environmental-quality/cleaner-air-for-scotland-2> You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the closing date above.

If you are unable to respond using our consultation hub, please complete and return the Respondent Information Form to:

Environmental Quality Unit
Scottish Government
Area 3-H(S)
Victoria Quay
Edinburgh EH6 6QQ

Handling your response

If you respond using the consultation hub, you will be directed to the About You page before submitting your response. Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to be published. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form included in this document.

To find out how we handle your personal data, please see our privacy policy: <https://www.gov.scot/privacy/>

Next steps in the process

Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at <http://consult.gov.scot>. If you use the consultation hub to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so. An analysis report will also be made available.

Comments and complaints

If you have any comments about how this consultation exercise has been conducted, please send them to the contact address above or at air.quality@gov.scot

Scottish Government consultation process

Consultation is an essential part of the policymaking process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: <http://consult.gov.scot>. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.

Overview

CAFS 2 is shaped around 10 general themes, which largely reflect the high level recommendations arising from the CAFS review.

1. Health - A Precautionary Approach. The current weight of evidence justifies adopting a precautionary public health approach to air pollution reduction. As a minimum, compliance is required with domestic and international air quality standards but, where practicable and feasible, there should be continued efforts to reduce preventable air pollution still further beyond these limits.

2. Integrated Policy. Strategies, policies and plans being developed and implemented by central government for placemaking, climate change mitigation and adaptation, and related policies such as noise reduction, should be closely co-ordinated and aligned with those for air quality in order to maximise co-benefits. Local government, which is largely responsible for implementing the LAQM system, besides its planning, transport delivery, public health and regulatory roles, also has a key role to play.

3. Placemaking. National Planning Framework 4 (NPF4) will transform how Scotland's planning system shapes our places and society over the years and decades to come. It will provide an important context within which further air quality improvements will be delivered, supported by the Place Standard tool and the Place Principle, besides having regard to any national strategy for the improvement of air quality prepared by Scottish Ministers.

4. Data. There are gaps in both quality and coverage of air quality, transport and human health data in Scotland. Addressing these gaps will help to improve public awareness and engagement, modelling, reporting and ultimately, policy implementation. A greater focus on collecting traffic data in a way that supports air pollutant emission understanding will have similar benefits. Health data also require careful consideration so that Scotland-specific interpretations, plans and interventions are strengthened. Wider utilisation of low cost sensor technology, including citizen science initiatives, has a role to play too.

5. Public Engagement and Behaviour Change. More research is needed to provide clear evidence on levels of knowledge, attitudes, and concern related to air pollution, as well as on willingness to change behaviours which contribute toward air pollution. Many of the key drivers and incentives/disincentives will be closely related to those associated with climate change, but at the same time there will be differences in focus and approach. Development of complementary and co-ordinated public engagement strategies is therefore essential to deliver the required behavioural change outcomes and to avoid confusing or conflicting messages.

6. Industrial Emissions Regulation. Following the UK exit from the European Union (EU), the Scottish Government is committed to ensuring that EU environmental principles continue to sit at the heart of environmental policy and law in Scotland. In relation to current regulation, retained EU law will continue to apply, as will domestic regulations made to transpose EU Directives. Four specific environmental principles – precautionary principle, polluter pays principle, prevention

principle and rectification at source principle – are enshrined in the Treaty on the Functioning of the European Union (TFEU). The Scottish Government intends to ensure that these principles continue to have legal force over the development of policy and law in Scotland. The contribution of non-road mobile machinery (NRMM) including transportation refrigeration units and construction plant to air pollution in Scotland also requires attention.

7. Tackling Non Transport Emissions Sources. Domestic (household) burning and agriculture are two sectors not addressed in detail in the original CAFS, but which make an important contribution to air pollution in Scotland. Consideration is needed of performance and standards for domestic fires, stoves and fuels, and local authority powers to permit and control these, and a refreshed approach to good agricultural practice and aiming for increased nitrogen use efficiency of farming. Together, these have the potential to deliver significant improvements in air quality beyond current regulatory and management approaches.

8. Transport. Increasing modal shift to active travel and public transport is key to further reductions in transport emissions. This will mean, amongst other objectives, providing a transport system that facilitates active travel choices, better public transport provision, embracing new technologies, and constraints upon private vehicle use, especially in urban centres where pollution and congestion are most acute. The new National Transport Strategy (NTS2), published in February 2020, sets out an ambitious and compelling vision for Scotland’s transport system for the next 20 years. The four NTS2 priorities – reducing inequalities, taking climate action, helping deliver inclusive economic growth and improving our health and wellbeing – will underpin our efforts to deliver additional air quality improvements in CAFS 2.

9. Governance, Accountability and Delivery. Simple and effective governance arrangements and a focus on practical joined up delivery are imperative for CAFS 2. We need to be clear on who is doing what, who is leading, who is supporting and who is ultimately responsible if CAFS 2 is to be delivered as a coherent, integrated and successful strategy.

10. Further Progress Review. As with CAFS, the intention is that CAFS 2 will have a five year lifespan. A further review of progress on air quality improvements will commence during 2024 in order to track progress on delivering the actions in the new strategy, besides allowing Scotland to keep abreast of developments in the evidence base, technological advances and societal attitudes, so that remaining challenges and actions can be identified.

Introduction

1. In November 2015 the Scottish Government published 'Cleaner Air for Scotland – The Road to a Healthier Future'¹. This was the first separate Scottish air quality strategy. CAFS sought to bring together the major policy areas relevant to air quality - climate change, transport, planning, health and energy - within one overarching framework. The strategy sets out around 40 actions relating to these policy areas. Progress in delivering the CAFS actions is summarised in a series of annual reports, with a final report reviewing the overall achievements of CAFS published in February 2020.

2. When CAFS was published, there was a commitment to review the strategy after five years. However, given the significant number of policy developments with implications for air quality over recent years, alongside an increasing body of evidence demonstrating the human and environmental health impacts of poor air quality, it was decided to bring this process forward. Therefore, in November 2018, the Cabinet Secretary for the Environment, Climate Change and Land Reform commissioned an independently-led review of CAFS. The purpose of the review was twofold, firstly to assess progress to date in implementing the actions contained in the strategy and secondly to identify priorities for additional actions to deliver further air quality improvements.

3. The review was overseen by a steering group chaired by Professor Campbell Gemmell and supported by four specialist working groups covering health & environment; placemaking; agricultural, domestic & industrial emissions; and transport. The steering group submitted its final report² to the Scottish Government in July 2019 setting out a series of conclusions and recommendations. Between October and December 2019, an online survey allowed individuals and organisations to submit their views on the recommendations³. Both the review findings and these wider views have been used to inform development of this consultation.

The need for additional action on air quality

4. Over the last 50 years air quality has improved beyond all recognition. The choking smogs of the 1950s are a thing of the past, driven by concerted action, especially on energy use and transport. Air quality in Scotland's towns and cities is improving year on year, but there are still areas across the country where air quality standards for human health are not being met. Road transport in urban areas remains a significant contributor to poor air quality. Air pollution especially impacts on the more vulnerable members of society - the very young and the elderly or those with existing health conditions such as asthma, respiratory and heart disease. This makes air quality an important health inequalities issue.

5. As the CAFS review clearly demonstrated, additional work is necessary to ensure full compliance with legislative requirements, and to deliver further human and environmental health improvements. Also, the rate of decline in most regulated pollutant sources is now reducing. This suggests that the easier actions or at least

¹ <https://www.gov.scot/publications/cleaner-air-scotland-road-healthier-future/>

² <https://www.gov.scot/publications/cleaner-air-scotland-strategy-independent-review/>

³ <http://www.scottishairquality.scot/lez/cafs-review-documents>

those deemed priority, urgent and important have been taken and we are now dealing with the harder issues, where interventions may be more complex and more focused on behaviour change as well as technological improvement. An associated question is what our target levels for the key pollutants should be and how quickly do we wish to get there.

6. The majority of the 40 actions set out in CAFS, together with several additional actions not included at the time of publication have been completed; however some are still ongoing. Those actions will continue to be taken forward in parallel with the new actions set out in this strategy. The CAFS 2018/19 progress report⁴ provides full details on completed actions and the status of those still being implemented.

7. Further reductions in air pollution will require concerted action across many sectors including national and local government, the private and public sectors, and by the public itself. Increased awareness and understanding of the key issues and the interlinkages between them is needed, built on the foundation of good place design.

8. At the outset it is important to state that air pollution, climate change, quality of the urban environment and mobility are strongly interconnected. From this, it follows that effective policy co-ordination across these broad themes, at both central and local government levels, will deliver co-benefits greater than those possible by considering each in isolation. Although there has been some progress in this regard, it is clear from the evidence presented in the CAFS review that more needs to be done if these co-benefits are to be fully realised. Key to this will be embedding placemaking principles, with a strong focus on nature based solutions, across policy areas to guide our way to a cleaner, healthier and more attractive environment.

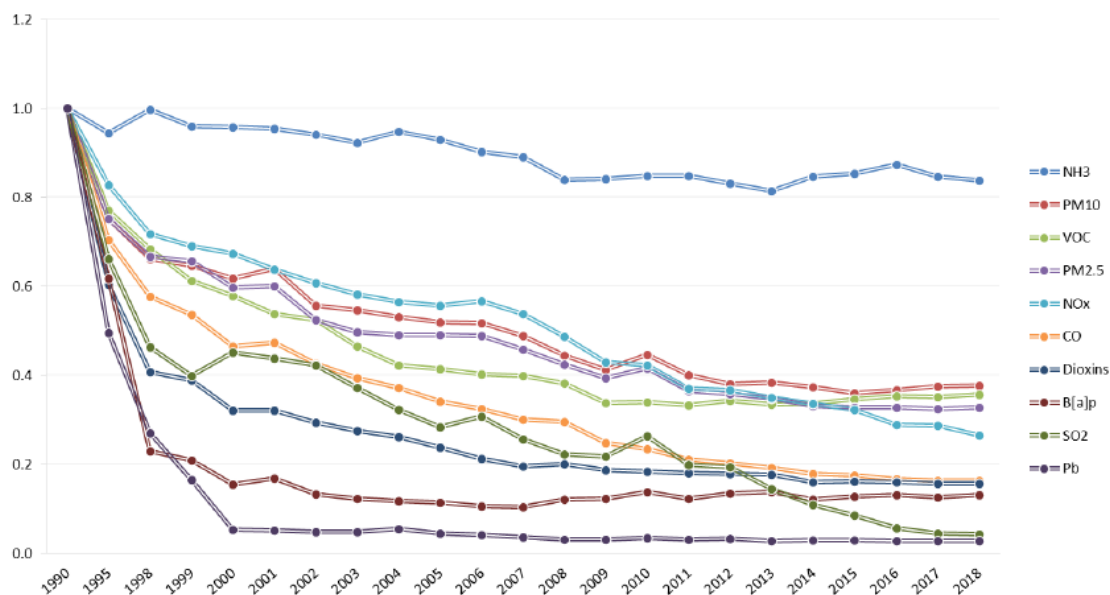
Emissions trends – 1990 to 2018

9. Emissions of the eight main air pollutants are lower in 2018 than they were in 1990 (Figure 1), although the rate of decline for some of these has started to level off in recent years. This rate of decline is relatively similar for particulate matter (PM₁₀ and 2.5), oxides of nitrogen (NO_x), non-methane volatile organic compounds (NMVOC), sulphur dioxide (SO₂) and carbon monoxide (CO). Lead (Pb) shows a much higher rate of reduction from 1990 to 2000 coinciding with the phase-out of leaded petrol from 2000. By contrast, ammonia (NH₃) emissions have declined at a slower rate than other pollutants, and even increased slightly over recent years. More detailed information can be found in the 'Air Pollutant Inventories for England, Scotland, Wales and Northern Ireland: 1990-2018'⁵

⁴ <https://www.gov.scot/publications/cleaner-air-scotland-road-healthier-future-2018-19-progress-report/pages/6/>

⁵ <https://naei.beis.gov.uk/reports/>

Figure 1: Emissions trends for the main air pollutants in Scotland since 1990



Coronavirus (COVID-19)

10. Since the CAFS review and during the drafting process for CAFS 2, the COVID-19 pandemic has changed the way we work, socialise and travel. Although CAFS 2 will have a five year lifespan, the current state of knowledge and lessons learnt at the time of publication will be reflected in the strategy. Any future developments relating to the pandemic which have implications for the policies set out in CAFS 2 will be addressed as updates to the delivery plan which is being developed to complement the strategy.

11. The unprecedented changes in living and working patterns are likely to have had a significant, but as yet unquantified, effect on air pollution. In Scotland, during the main lockdown period, nitrogen dioxide (NO₂) levels declined. Analysis of eight urban air quality monitoring stations showed peak decreases from 49% at Atholl Street, Perth to 72% at Hope Street, Glasgow⁶. Although detailed data are not available at the time of writing, it is likely that pollution levels will have increased again since lockdown measures began to be relaxed.

12. At the beginning of July 2020, the Air Quality Expert Group, which advises the UK Government and devolved administrations on air quality, published a report of its call for evidence on changes in air pollution emissions, concentrations and exposure across the UK during the pandemic⁷. This provides a useful overview of the available evidence at that point in time. However, long term data covering the full period of the pandemic and beyond will be required in order to draw robust conclusions.

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http://www.scottishairquality.scot/assets/documents/news/COVID19_lockdown_Time_Variance_analysis_of_air_quality_in_Scotland.html

⁷ https://uk-air.defra.gov.uk/library/reports.php?report_id=1005

13. As the lockdown restrictions are eased it is recognised that green recovery must form a central part of Scotland's emergence from the pandemic. The report of the Scottish Government's Advisory Group on Economic Recovery, published in June 2020, sets out a number of recommendations on how this might be achieved⁸. Such an approach will help Scotland meet its climate change targets and improve air quality, whilst supporting economic recovery.

Air Quality Legislation

National Emission Ceilings Directive

14. The National Emission Ceilings Directive (NECD) (2016/2284/EU) sets national emission ceilings for certain atmospheric pollutants (nitrogen oxides, non methane volatile organic compounds, sulphur dioxide, ammonia and (new in the 2016 Directive) fine particulate matter PM_{2.5}). It implements at EU level obligations under the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution of 1979 (CLRTAP) and, in particular, its 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone of 1999, which was revised in 2012 (the revised Gothenburg Protocol). The NECD transposes 2020 targets agreed under the revised Gothenburg Protocol, along with more ambitious targets for 2030.

15. The NECD has been transposed into domestic law through the National Emission Ceilings Regulations 2018⁹ and the requirements will be implemented at UK level through a National Air Pollution Control Programme¹⁰. Although the UK is on course to meet the 2020 targets for all pollutants (other than ammonia), new policies will be required to ensure 2030 compliance. Further information is set out in the joint UK National Air Pollution Control Programme (NAPCP)¹¹. The actions set out in this strategy will make an important contribution to the NAPCP and Scotland's wider role in securing compliance with international commitments.

Local Air Quality Management

16. Under the Environment Act 1995 and associated regulations, all Scottish local authorities are required to regularly review and assess air quality in their areas against several air pollutants of concern for human health. If this assessment indicates that any objective is not being met, the authority concerned must declare an Air Quality Management Area (AQMA) and produce an action plan setting out measures to address the issues identified. At the time of publication of this consultation, 38 AQMAs were in place in Scotland, all but two of which were declared for transport related exceedences of nitrogen dioxide and/or PM₁₀. The majority of issues in these AQMAs relate to localised pollution hotspots within urban centres. The remaining two AQMAs have been declared for industrial emissions of sulphur dioxide and PM₁₀ respectively¹².

⁸ <https://www.gov.scot/publications/towards-robust-resilient-wellbeing-economy-scotland-report-advisory-group-economic-recovery/pages/6/>

⁹ <http://www.legislation.gov.uk/uksi/2018/129/contents/made>

¹⁰ <https://www.gov.uk/government/publications/air-quality-uk-national-air-pollution-control-programme>

¹¹ <https://www.gov.uk/government/publications/air-quality-uk-national-air-pollution-control-programme>

¹² <http://www.scottishairquality.scot/laqm/aqma>

17. Data from the Scottish air quality monitoring network, which consists of around 100 sites across the country¹³, show a clear downward trend in pollutant concentrations in recent years. In some cases declared AQMAs are already compliant with the objectives; however the Scottish Government requires at least three consecutive years of compliance before revocation can proceed. The Scottish Government is working closely with relevant authorities to ensure revocation can take place as soon as possible. In remaining cases, further progress with action plan implementation is needed to secure compliance.

Ambient Air Quality Directive

18. Under the Ambient Air Quality Directive and transposing regulations, the UK is required to meet limit and target values for a range of air pollutants. In Scotland, full compliance has been secured with all of these limit and target values, with the exception of a small number of nitrogen dioxide exceedences. In 2017 a joint UK action plan on nitrogen dioxide¹⁴ was submitted to the European Commission, outlining how compliance will be achieved in the shortest time possible.

National Nitrogen Balance Sheet

19. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, requires the creation of a nitrogen balance sheet (NBS) for the country by March 2022. Once established, the NBS will quantify nitrogen flows across economic and environmental sectors, including agriculture, waste, production and consumption, and between water, land and air. It will provide a baseline on Scotland's current nitrogen use efficiency, i.e. the proportion of nitrogen used for its intended purpose vs. losses to the environment. This baseline creates a new type of cross-sectoral evidence base that quantifies the uses and losses of nitrogen and enables identification of more and less nitrogen use-efficient processes, and will inform future decision-making across a range of policy areas, including air quality.

¹³ <http://www.scottishairquality.scot/latest/summary>

¹⁴ <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

1. Health – A Precautionary Approach

20. There is scientific consensus that exposure to air pollution is harmful to people's health in terms of premature mortality and morbidity, mainly related to respiratory and cardiovascular disease. It is widely accepted that outdoor air pollution causes damage to human health across a wide range of conditions, from pre-birth to old age. Indeed, the evidence of effects of both short-term and long-term exposure continues to grow, with the greatest public health effects being associated with long-term exposure. Air pollution is also harmful to the environment generally, in particular to sensitive habitats and the wildlife depending on these, across Scotland, from local emission sources and more widely through dispersion and long-range transport of air pollutants. A detailed review of the evidence on human health impacts of air pollution was undertaken by the health and environment working group which supported the CAFS review, together with a comparison of the international and Scottish evidence¹⁵. There is also emerging evidence showing a possible association between air pollution and both exacerbated symptoms and mortality levels attributed to COVID-19, although not all of this evidence will necessarily have taken into account possible confounding factors. This area of research will continue to evolve.

21. Human health improvements are not related solely to direct reductions in air pollution. Policies that improve air quality can potentially have multiple co-benefits for population health, for addressing inequality and for mitigating and adapting to climate change. A prime example is policy to promote active travel. Walking, wheeling and cycling increase physical activity, significantly reduce cardiovascular incidence and mortality, and have been shown to reduce all-cause mortality, even after controlling for other physical activity¹⁶. Evidence shows that the physical activity benefits of active travel outweigh the harm caused by potentially more exposure to air pollution in all but the most extreme situations. However, walking, wheeling and cycling in places with noticeable poor air quality is a disincentive. Measures to reduce air pollution from road transport and to increase levels of active travel can therefore amplify benefits to public health.

22. Evidence continues to accumulate on the impacts of poor air quality, expanding our understanding of how air pollution is harmful to public health and the environment. Although many of the most important pollutants are now below accepted existing health based limits, areas of concern remain. Despite the general downward trend, high levels of nitrogen dioxide persist in some urban hotspots. Scotland is fully compliant with fine particulate matter targets at EU level, and almost so domestically, but there is currently no known threshold below which health impacts don't occur. In addition ammonia, which is a major contributor to particulate matter formation and also has direct environmental impacts, around 90% of which is generated by the agricultural sector, has not reduced at anything like the same rate as other pollutants, and even increased over some recent years. Findings from outside the UK suggest that harmful impacts can occur at levels below currently used health based limits¹⁷.

¹⁵ <http://www.scottishairquality.scot/assets/documents/Health-Environment-Working-Group-Report.pdf>

¹⁶ <http://www.scottishairquality.scot/assets/documents/Health-Environment-Working-Group-Report.pdf>

¹⁷ http://www.euro.who.int/_data/assets/pdf_file/0004/193108/REV_IHAAP-Final-technical-report-final-version.pdf?ua=1

23. More evidence is also available on effective interventions for reducing people's exposure, especially to transport related pollution. Consequently, despite recent encouraging trends, there remains scope for further beneficial reductions.

24. Other issues that correlate closely with air pollution in terms of impacts on people and the environment also need to be taken into account, including noise (especially transport generated noise) and greenhouse gas emissions that contribute to global climate change. Increased awareness of these interrelationships is needed, as is the potential to link co-beneficial mitigating actions. Given the close linkage between outdoor and indoor air pollution and the high proportion of time spent indoors, especially by urban dwellers, indoor air quality is also important.

25. Taking this evidence into account, in 2016 Scotland became the first country in Europe to adopt into domestic legislation the World Health Organisation (WHO) guideline value for PM_{2.5} of 10µg m³ as an annual mean¹⁸.

26. The relationship between air pollution and mortality is complex, with multiple interacting factors, one of which may be air quality, typically contributing to the death of a specific individual. Using the recommended approach of the WHO and based on previous work undertaken by the UK's Committee on the Medical Effects of Air Pollution, in 2018 Health Protection Scotland provided an estimate of approximately 1700 attributable (premature) deaths in Scotland annually¹⁹. It is important to note that attributable deaths are not actual recorded deaths in a particular year; the figure is a statistically derived estimate, intended to convey as faithfully as possible the amount of excess mortality caused by air pollution across the population as a whole. The figure should therefore not be interpreted as the number of individuals in any year where air pollution has made some contribution to earlier death; that number is unknown but is almost certainly larger. Although no figure has been calculated for the combined impact of PM_{2.5} and NO₂ on attributable deaths, based on the PM_{2.5} estimate and taking into consideration internationally derived risk estimates, around 2000 attributable deaths annually may be a reasonable number²⁰.

27. There is some uncertainty from international studies about the scale of health effects associated with low pollutant concentrations typical of those found in much of Scotland today. The body of Scottish research, while relatively small, has repeatedly demonstrated impacts of pollutants on respiratory illness that are consistent with international evidence. There is also growing evidence from around the world showing associations of air pollution with other important health conditions including cardiovascular disease, dementia, diabetes, and adverse pregnancy outcomes (low birth weight and prematurity). Collectively this constitutes good evidence that air pollution, even at the concentrations found in much of Scotland is linked to excess ill health. Consequently, despite the recent encouraging trends in air pollution in Scotland to date, there remains scope for further beneficial reduction. However, given the relatively low ambient pollutant levels across most of the country, it is difficult to predict, and is likely to be hard to demonstrate accurately, the level of additional health gain that might result from further reductions in air pollution.

¹⁸ <http://www.legislation.gov.uk/ssi/2016/162/contents/made>

¹⁹ <https://www.hps.scot.nhs.uk/web-resources-container/air-pollution-and-health-briefing-note-mortality-associated-with-exposure-to-fine-particulate-matter-pm25-attributable-mortality-in-scotland/>

²⁰ <http://www.scottishairquality.scot/assets/documents/Health-Environment-Working-Group-Report.pdf>

28. Achieving these aims will require concerted action to make health focused policy development more of a joint priority across all relevant central and local government departments. To achieve meaningful change, everyone - government, business and industry, employers (private and public) and the general public - will need to be encouraged to play their part in helping to reduce the future health burden associated with avoidable air pollution.

29. The inequalities issues associated with the effects and impacts of air pollution on health require further consideration. The Scottish Index of Multiple Deprivation (SIMD) contains extensive and valuable data which can be used to explore evidence of links between socially deprived communities and air quality. The relationship between deprivation and air quality is complex, and it is not always the case that the most deprived areas will experience the worst air quality²¹. At the same time, those who generate the least air pollution are often those who suffer its effects most. Low access to economic opportunity often combines with poor health and poor activity levels, poor access to affordable mobility and likely exposure to air pollution. The key therefore when implementing measures to tackle air pollution must be to avoid inadvertently embedding environmental injustice into proposed solutions.

30. Air pollution causes harm to human health and, while significant improvements have been made, the impacts continue to be felt. Whilst there is increasing evidence of both population-level and specific impacts that require to be addressed, causation is often hard to prove given the multiple and interlinked factors affecting health. More action is required, both in order to achieve legal compliance with domestic and international standards and to further improve the overall health of the population of Scotland, in particular those most vulnerable members of society upon whom air pollution can have the most acute impacts. We must work coherently and effectively together, across central and local government, to develop and implement integrated health focused policies which deliver lower air pollution and better health outcomes.

Indoor air quality

31. Urban populations in the UK spend around 90% of their time indoors; the quality of the indoor air is therefore at least as important as that of outdoor air. Indoor air quality is influenced by multiple factors including ambient outdoor air pollution. This makes estimating the health impacts of indoor air quality alone very challenging. Unlike outdoor air quality, there are no regulated limits for indoor pollutants in domestic settings in the UK. The WHO published guidelines in 2010 on safe concentrations of indoor air pollutants for general use and the Health and Safety Executive (HSE) publishes occupational limits for a range of workplace air pollutants²². Guidance on domestic indoor air quality has been produced by the National Institute for Health and Care Excellence²³ and in January 2020 the Royal College of Paediatrics and Child Health published a review on the impacts of indoor air quality on children and young people²⁴.

²¹ <http://eprints.gla.ac.uk/159742/7/159742.pdf>

²² <https://www.hse.gov.uk/pubns/books/eh40.htm>

²³ <https://www.nice.org.uk/guidance/ng149>

²⁴ <https://www.rcpch.ac.uk/resources/inside-story-health-effects-indoor-air-quality-children-young-people>

32. Given the wide range of factors contributing to indoor air quality, no single body or organisation can realistically have sole responsibility for addressing it. Thus there is a need for policy integration and coherence to avoid the risks of unintended consequences. Non-health related developments (for example relating to building standards, furnishings or cleaning products) could have unexpected adverse health impacts if a wider perspective is not taken.

In-vehicle emissions

33. In-vehicle air quality²⁵ studies tend to compare outside and inside air pollution levels with evidence suggesting that air quality inside vehicles can be significantly poorer when compared to typical roadside pollution levels experienced by pedestrians and cyclists. Very few studies compare different transport modes on the same routes at the same time. The measurement of in-vehicle air pollution - and the associated development of risk reduction strategies - is still an emerging science. There is also limited research into in-vehicle air quality caused by the use of the recirculation mode on vehicle air filter systems and its impacts on driver health, wellbeing and alertness.

34. In-vehicle air quality personal exposure can be influenced by a complex array of factors beyond the transport mode choice, such as traffic conditions, traffic intensity and road type. Mitigation actions to reduce in-cabin air pollution may include keeping a safe distance from vehicles ahead, keeping windows closed when in traffic (which may presumably be undertaken by the majority of drivers) and setting the vehicle ventilation for a short period of time to recirculation mode. There is also emerging evidence on the role of in-vehicle CO₂ associated with using the recirculation mode in a car with multiple passengers on a non-local journey.

Actions

We will:

- Assess the evidence on health impacts of low level pollution in countries with levels of ambient air pollution comparable to Scotland.
- Commission population research on the long term effects of air pollution using cohort methods to aid further understanding of health impacts and explain the apparently different epidemiology in Scotland.
- Convene a task group to identify what, if any, actions might best be undertaken at Scottish level to address the issues associated with indoor air pollution.

²⁵ Can refer to a mix of pollutants including ultrafine particles (particulate matter (PM₁₀, PM_{2.5} and PM_{0.3}), black carbon (BC), ultra-fine particle number concentration (UFP), aromatic hydrocarbons, carbonyls, semi-volatile organic compounds, total volatile organic compounds (TVOCs), carbon monoxide (CO), carbon dioxide (CO₂), airborne bacteria, microbes and fungi levels.

- Commission an assessment of actual exposures experienced by a representative sample of the Scottish population, assessing pollution exposures over a realistic activity range during a normal time period.
- Contribute to research on in-vehicle air quality measurement methodology, the use of recirculation mode for long-distance journeys related to CO₂ and in-vehicle air pollution related to occupational health.

Question on Health

1. Do you agree with the package of actions put forward in the health chapter?

A) Yes

B) No

C) Neither agree or disagree

Additional comments in support of your answer

2. Integrated Policy

35. The public health effects of indoor air quality and noise pollution correlate strongly with those of outdoor air pollution. Similarly, there is significant overlap between the measures needed to address climate change and improve air quality in areas such as transport, agriculture and industrial emissions. Effort to address these issues in a more co-ordinated way offers additional likely co-benefits. Improving air quality makes an important contribution to the United Nations Sustainable Development Goals²⁶ and the Scottish Government's National Outcomes²⁷. In a wider context, further progress in embedding placemaking principles across all policy areas will deliver benefits for both physical and mental health through creating better urban spaces that are more attractive to spend time and easier to move around in.

36. CAFS 2 must work in tandem with other key Scottish Government strategies, notably the National Transport Strategy 2, Climate Change Plan²⁸, National Planning Framework and Infrastructure Investment Plan, in order to achieve the vision for Scotland to have the cleanest air quality in Europe. Clear synergies exist between these strategies.

37. It is crucial that our transport and placemaking agendas interact in a way that drives tangible and measurable emissions reduction, whilst enabling great places where people live, work and play to become even more connected, accessible, affordable and efficient.

Air pollution and climate change

38. Greenhouse gases and air pollutants share common sources, notably transport, energy generation and land use practices, and will thus benefit from many of the same policy interventions. Some air pollutants can also act as greenhouse gases (e.g. ozone) or contribute to their formation (e.g. nitrogen oxides). Conversely, changes in the climate will impact on air quality; increases in temperature may affect ozone formation, increasing the frequency and severity of summer smogs, and increase emission rates of ammonia. At the same time, air pollution and climate change generally act at different scales, both spatially and temporally. Greenhouse gases are most active high up in the atmosphere, whereas the most important factors for air quality are the location and level of concentration of pollutants nearer the earth's surface, with increased impacts near emission hotspots. There are also complex relationships and trade-offs between the various pollutants that need to be managed. For example black carbon makes a significant warming contribution, besides being an important component of PM. Reducing such emissions therefore has a clear benefit for both climate change and air quality. On the other hand, whilst reducing sulphur dioxide emissions has been positive for both public health and the environment, atmospheric cooling from sulphate or "white" aerosols (secondary PM) it helps to form is also reduced.

²⁶ <https://sustainabledevelopment.un.org/?menu=1300>

²⁷ <https://nationalperformance.gov.scot/index.php/national-outcomes>

²⁸ <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018-9781788516488/>

39. With transport being Scotland's largest greenhouse gas (GHG) emitting sector²⁹, the NTS climate action and health/wellbeing priorities highlight the crucial role of transport in delivering improvements to both climate and air quality emissions. Actions on climate change and air quality can present policy interlinkages and offer tangible co-benefits³⁰ in a way that supports delivery of our air quality vision³¹.

40. Employers across all sectors are adapting Carbon Management Plans (CMPS) to formulate GHG strategies that support the net-zero agenda³² and circular economy. In doing so, many CMPs are broadening their reach beyond traditional aspects such as estate energy management and travel planning, but we should not lose sight of these core tenets, particularly given the thinking and lessons learnt around homeworking and estate management prompted by the COVID-19 pandemic.

41. In 2016, the CAFS Governance Group commissioned a report 'Synergies and tensions between climate change and air quality actions'³³. The report, including 50 key recommendations, was intended to help inform the 2018 Scottish Climate Change Plan. The report also contributed to the work of a UK cross-department group that has been set up to explore the requirements and opportunities for cross disciplinary research to provide a stronger evidence base for analysing the synergies and tensions of policy and regulation of air quality and climate change. Of the 50 recommendations made in the report, 38 presented strong evidence of synergies between tackling climate change and improving air quality simultaneously.

42. By 2018, Scotland's source greenhouse gas emissions had declined by over 45% since 1990. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019³⁴ sets a target of net zero emissions of all greenhouse gases by 2045. The Act also sets a 75% emissions reduction target for 2030, and 90% by 2040, from a 1990/95 baseline. The Scottish Government is updating its current Climate Change Plan³⁵ to account for the new targets in the 2019 Act. The Climate Change Plan update will be published later this year and will set out plans for a green recovery from COVID-19, alongside a strategy to meet future emissions reduction targets. Building on the initial policies set out in the Scottish Government's Programme for Scotland 2019-20³⁶ to end Scotland's contribution to climate change, the updated Climate Change Plan will contain a wide range of measures that will provide air quality benefits and aligns closely with the aims of this strategy.

²⁹ Scottish greenhouse gas emissions 2017, <https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/pages/3/>

³⁰ <https://ccacoalition.org/en/resources/synergizing-action-environment-and-climate-good-practice-china-and-around-globe>

³¹ For example, societal change toward the reduction in demand for unsustainable travel could see modal shift through the uptake of active travel or public transport (with less reliance on single occupancy private car use) to help reduce climate and air quality related emissions. Promoting active travel will also improve health and wellbeing.

³² <https://www.zerowastescotland.org.uk/save-energy-reduce-waste/carbon-management-plans>

³³ <http://www.scotshairquality.scot/assets/documents/CAFS-Climate-Change-Sub-Group-Report.pdf>

³⁴ <http://www.legislation.gov.uk/asp/2019/15/contents>

³⁵ <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018-9781788516488/>

³⁶ <https://www.gov.scot/publications/protecting-scotlands-future-governments-programme-scotland-2019-20/pages/5/>

43. A key part of the Scottish Government's approach on climate change is ensuring a just transition. This means reducing emissions in a way which is fair for all and leaves no-one behind. The Climate Change (Emission Reduction Targets) (Scotland) Act 2019 contains a set of just transition principles, that Ministers must have regard to when setting out plans to reduce emissions.

44. To further support the application of just transition principles, the Scottish Government established the Just Transition Commission to advise Ministers on how we can maximise the economic and social opportunities of meeting our climate change targets, while managing the challenges.³⁷ The Commission published its interim report in February 2020, and is due to deliver its final report to Ministers in early 2021.

45. The Scottish Government's approach on just transition is in line with the desired outcome of better air quality. Embedding just transition principles in Government policy will therefore help deliver a win-win in the form of reduced greenhouse gas emissions and improved air quality for people all over Scotland, in turn ensuring the benefits of climate action are shared widely.

Air pollution and noise

46. As yet there are no fixed noise level targets in Scotland or the rest of the UK. In 2002 the EU adopted the Environmental Noise Directive which stipulates that measurements must be taken of ambient noise, with the results being made publicly available and action plans for noise reduction must be agreed. The World Health Organisation (WHO) published guidance in 2018 on environmental noise levels taking account of existing health effects evidence³⁸.

47. In Scotland's four biggest cities, it has been estimated that over one million people are exposed to noise levels in excess of the WHO guidelines during the daytime and over 0.8 million during the night, with evidence indicating that deprived communities suffer more³⁹. The health impact costs have not been directly estimated in Scotland but, based on WHO estimates elsewhere, may be considerable.

48. As with urban air pollution, the major source of ambient noise is road traffic. The adverse impacts of air pollution are closely correlated with those of noise, making it difficult to assess the impact of traffic noise on health separately. However, this does mean that many interventions aimed at reducing traffic sourced air pollution are also likely to help reduce excess traffic sourced noise. These interventions range from traffic reduction in urban areas to physical solutions such as green barriers along roads.

³⁷ <https://www.gov.scot/groups/just-transition-commission/>

³⁸ <http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2018/environmental-noise-guidelines-for-the-european-region-2018>

³⁹ <https://noise.environment.gov.scot/noise-statistics.html>

Actions

We will:

- Work with local authorities to ensure that noise action plans are closely aligned with air quality action plans to deliver co-benefits. Guidance will be produced to facilitate this.
- Ensure that all actions taken by the Scottish Government to address air quality maximise the potential for co-benefits with climate change mitigation and adaptation. The 50 recommendations for maximising co-benefits set out in the CAFS Governance Group climate change report will be used to guide this process. We will work with local authorities to ensure that a similar approach is taken at local level.
- Ensure that actions in the Scottish Government's Climate Change Plan maximise co-benefits for air quality.

Questions on integrated policy:

2. Do you agree with the package of actions put forward in the integrated policy chapter?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

3. What in your opinion and/or experience are the barriers to cross departmental working within local authorities or other organisations on air quality and how can these barriers be overcome?

3. Placemaking

49. There is a long history of spatial planning and design in Scotland. Early leadership, from those such as Sir Patrick Geddes, the Edinburgh based founding father of modern urban planning, has been recognised for a century. In modern terminology we would probably refer to this as placemaking, with a focus on behavioural change and nature-based solutions. Placemaking means working collaboratively across professions and communities to identify the best place based solutions for the issues that we face.

50. It is evident that many of the challenges we face in delivering air pollution improvements, especially in our towns and cities, result from multiple historical policies and decisions, providing us with an inheritance of built environments, road layouts and infrastructure. Over the last 120 years the approach has been particularly shaped around our relationship with road transport, and in particular private cars.

51. Road transport will remain vital to the functioning of modern transport but a society built around car access and ownership is inherently unequal and can create constraints within our built fabric. However we do have experience to help us build new places which can be more equal in how space is used, and can also use that experience in improving our existing places. The key is ensuring that such approaches become embedded and normalised across central and local government, the private sector and for us as individuals within society.

52. It is also necessary to recognise the role of open space in the way we plan, design and manage our urban landscapes - as resources, as buffers and spaces for recreation, active mobility and nature. The Planning Act (Scotland) 2019⁴⁰ makes it a requirement for planning authorities to prepare and publish an open space strategy covering their policies and proposals as to the development, maintenance and use of green infrastructure in their district, including open spaces and green networks. We are currently working to bring forward the secondary legislation on Open Space Strategies and Play Sufficiency Assessments.

53. The European Commission has highlighted the role that nature-based solutions can play in placemaking⁴¹. There is growing recognition and awareness that nature can help provide viable solutions that use and deploy the properties of natural ecosystems and the services that they provide in a smart, 'engineered' way. These nature-based solutions provide sustainable, cost-effective, multi-purpose and flexible alternatives for various objectives. Working with nature, rather than against it, can further pave the way towards a more resource efficient, competitive and greener economy. It can also help to create new jobs and economic growth, through the manufacture and delivery of new products and services, which enhance the natural capital rather than deplete it.

54. Nature-based solutions aim to help societies address a variety of environmental, social and economic challenges in sustainable ways. They are actions which are inspired by, supported by or copied from nature. Some involve

⁴⁰ <http://www.legislation.gov.uk/asp/2019/13/introduction/enacted>

⁴¹ <https://ec.europa.eu/research/environment/index.cfm?pg=nbs>

using and enhancing existing natural solutions to challenges, while others are exploring more novel solutions, for example mimicking how non-human organisms and communities cope with environmental extremes. Nature-based solutions use the features and complex system processes of nature, such as its ability to store carbon and regulate water flow, in order to achieve desired outcomes, such as reduced disaster risk, improved human well-being and socially inclusive green growth. Maintaining and enhancing natural capital, therefore, is of crucial importance, as it forms the basis for implementing solutions. These nature-based solutions ideally are energy and resource-efficient, and resilient to change, but to be successful they must be adapted to local conditions.

55. If we get placemaking right, we can tackle air pollution, create better, more sustainable places, contribute to improved physical and mental health and provide high quality spaces for work, life and play. This in turn makes locations more attractive for business, too. The report produced by the CAFS review placemaking working group⁴² provides further background and context.

National Planning Framework 4

56. The Scottish Government is reviewing its national planning policies (National Planning Framework 3 (NPF3)⁴³ and Scottish Planning Policy (SPP)⁴⁴) with a view to bringing them together into a single policy document (NPF4). This provides the opportunity to change planning policies including with the aim of improving air quality outcomes from new development and planned changes in the built and natural environment. Indeed, the Planning (Scotland) Act 2019 requires that the revised National Planning Framework has regard to any national strategy in respect of the improvement of air quality prepared by Scottish Ministers.

57. The planning system as a whole works towards delivering the vision shared by the NPF and SPP by promoting good quality places through policy and regulation. In this respect it also helps to link air quality to health, economic, and environmental outcomes. NPF is the Scottish Government's spatial strategy for Scotland's long term development, identifying where opportunities and challenges exist. SPP sets out national thematic planning policies to be taken forward through development plan policy and decisions on planning applications. The development plan is the starting point for decision making on planning applications – decisions must be made in accordance with the plan unless material considerations indicate otherwise.

58. Planning policy and regulation is implemented mainly through setting out a development plan that is then used as the basis of decision making on planning applications. Local development plans are prepared by planning authorities across Scotland and decisions on planning applications are made in the first instance by those planning authorities.

59. NPF4 will be the fourth version of the long term spatial plan for Scotland that sets out where development and infrastructure is needed to support sustainable and inclusive growth. NPF4 will look towards 2050, guiding spatial development, setting

⁴² <http://www.scottishairquality.scot/assets/documents/Placemaking-Working-Group-Report.pdf>

⁴³ <https://www.gov.scot/publications/national-planning-framework-3/>

⁴⁴ <https://www.gov.scot/publications/scottish-planning-policy/>

out our national policies, designating national developments and reflecting regional spatial priorities. NPF4 will also for the first time incorporate SPP and will take on enhanced status as part of the statutory development plan. This means the policies within NPF4 should be capable of day to day use by planning authorities in determining planning applications. The spatial aspect of NPF4 has the capability of directing planning authorities to key challenges and opportunities in their areas.

60. The Planning (Scotland) Act 2019 set out six outcomes that the National Planning framework should contribute towards, including improving the health and wellbeing of the people of Scotland, improving equality and meeting greenhouse gas emission reduction targets, that relate directly to the aims of CAFS 2.

61. At present air quality is referenced in SPP in the Principal Policy on Sustainability. This forms a potential material consideration in plan making and determining planning applications. SPP does not currently set out what attributes of land allocations or individual development proposals lead to improved air quality, although does note for some development types that air quality is a matter to be considered. SPP Annex A on Town Centre Health Checks and Strategies states that town centre strategies should identify how green infrastructure can enhance air quality as well as a range of other impacts. The Planning for Zero Waste policy is clear that consideration should be given to buffer zones between sensitive receptors and dwellings and some waste management facilities. SPP highlights that sensitive receptors are aspects of the environment that are likely to be significantly affected by a development including population and air.

62. The Scottish Government published in 2019 research on the 'Adoption of Scottish Planning Policy in Local Development Plans'⁴⁵. This research brings together details on all local development plan policies that are implementing SPP. The research found that there is very little direction in SPP as to how development plans and development management can ensure planning development does not have a detrimental impact on local air quality. Although air quality impacts may be considered in Environmental Impact Assessment and Strategic Environmental Assessment, the former does not apply to all developments and the latter applies only to plans, programmes and strategies.

63. Early engagement on the preparation of NPF4 was undertaken in 2020. We are anticipating a draft NPF4 to be laid before the Scottish Parliament in autumn 2021, which will be accompanied by public consultation. This provides an opportunity to review planning policy on air quality and provide a spatial planning policy response to CAFS 2. The final NPF4 is anticipated to be published in 2022.

The Place Principle

64. In April 2019 the Scottish Government and CoSLA agreed to adopt the Place Principle⁴⁶ to help overcome organisational and sectoral boundaries, encourage better collaboration and community involvement, and improve the impact of combined energy, resources and investment in Scotland's regions, cities, towns, and neighbourhoods. It promotes a shared understanding of place, to support inclusive

⁴⁵ <https://www.gov.scot/publications/research-project-adoption-scottish-planning-policy-local-development-plans/>

⁴⁶ <https://www.gov.scot/publications/place-principle-introduction/>

and sustainable outcome improvement and the need to take a more collaborative approach to a place's services and assets to achieve better outcomes for people and communities. The Place Principle brings ideas about investments, resources and assets under one roof and is based on an understanding that decision making and delivery that is informed by the people who live and work locally is key to the economic, social, cultural and environmental success of places. The principle encourages and enables local flexibility to respond to issues and circumstances in different places.

The Place Standard

65. The Place Standard tool⁴⁷ was produced by the Scottish Government, Public Health Scotland⁴⁸, Architecture and Design Scotland and Glasgow City Council and launched in December 2015. The Place Standard tool supports individuals, communities and public, private and third sector organisations to think about both the physical elements and the social aspects of a place together in a structured way by asking a series of questions based on the evidence about which aspects of place are important to health and wellbeing. This provides a framework for evaluation, for assessing the strengths and weaknesses and for prioritising areas for action to improve new and existing places. The Place Standard tool is designed to support a place-based approach and the delivery of high quality, sustainable places that promote community wellbeing and more positive environmental impacts, maximising the potential of the physical and social environment to support health, wellbeing and a high quality of life and reduce health inequalities.

66. A revised version of the Place Standard tool will be launched in 2020 to address gaps in the original tool identified in a changing climate, including enhancements to better enable place-based conversations to address climate change and improve environmental sustainability. The integrated approach offered by the Place Standard tool to understanding the physical, social and economic aspects of a place provides a holistic means of assessing and taking action on issues such as travel and transport, green infrastructure, place design and layout, that can deliver co-benefits such as air quality improvements. A 'Design' version aimed at designers (architects, planners), developers and clients is also being created to support the design process to deliver healthier places, including the delivery of air quality improvement co-benefits.

67. Furthermore, an air quality 'technical' version of the Place Standard tool has also been piloted. This provided additional prompts and guidance to support a stronger focus on air quality within a holistic assessment of a place, which can support specific action to address air quality concerns.

⁴⁷ <https://www.placestandard.scot/>

⁴⁸ This organisation was NHS Health Scotland until end of March 2020.

Actions

We will:

- Ensure that NPF4 has regard to CAFS 2 in its preparation.
- Continue to promote the use and role of the Place Standard tool(s) in place-based approaches, enabling delivery of air quality improvement as a co-benefit of delivering high quality sustainable places that support health & wellbeing and reduce health inequalities.
- Work with local authorities who wish to develop a targeted approach where appropriate for utilising the Place Standard tool with an air quality focus.
- Undertake a review of nature based and green infrastructure interventions which can benefit air quality, using the outcomes to develop a database of potential solutions.
- Work with local authorities to assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

Questions on placemaking:

4. Do you agree with the package of actions put forward in the placemaking chapter?
- A) Yes
 - B) No
 - C) Neither agree nor disagree

Additional comments in support of your answer

5. Do you have any suggestions on the role of place-based approaches in delivering targeted air quality improvements?

A large, empty rectangular box with a thin black border, intended for the user to provide their suggestions on the role of place-based approaches in delivering targeted air quality improvements.

4. Data

68. There is a comprehensive body of air quality data for Scotland going back many years, which provides an invaluable resource for assessment and policy development⁴⁹. At the same time it is important that we regularly review our approaches to data collection and utilisation, to ensure that we realise the potential of new technologies, continue to collect data that are relevant, robust and fit for purpose, and link effectively to related datasets that can provide added value in supporting joined up policy delivery.

69. Until relatively recently the vast majority of real time measurements of air quality in Scotland and the rest of the UK were made by established reference methods, using monitoring equipment that meets defined international standards for data quality. However, in the last decade there has been rapid growth in the development of low cost sensors for air pollution measurement. These can range from simple single pollutant sensors to relatively sophisticated multi pollutant devices that include communications and meteorological capabilities, differing from reference methods in features such as accuracy, compactness, mobility, lifespan and lower power consumption.

70. Low cost sensors have a number of potential advantages. In particular they allow for a much larger number of measurements to be made, covering a wider geographical area. Some are small enough to be carried on or by individuals, allowing direct estimates of personal exposure to be made. They can also be used to complement or improve upon existing modelling based approaches to supplement monitoring data. Additionally they can play a useful role in education and awareness raising. At the same time, there are many uncertainties. Sensor technology is evolving rapidly, and accuracy is often an issue, making it difficult to judge the merits of and make recommendations on the use of specific instruments. Therefore data from low cost sensors cannot be used to report directly against compliance with legal air quality objectives. Their use beyond citizen science and awareness raising are to assess spatial and temporal trends to identify air pollution issues that cannot be adequately captured by reference methods. The Air Quality Expert Group, which provides independent scientific advice to central government in the UK, has produced a detailed overview of low cost sensor technology and application⁵⁰.

71. Low cost sensors also have a valuable educational role, both in schools and wider citizen science projects. SEPA has been working with schools in several local authorities on the [CleanAir@School](#) project, enabling pupils to measure air pollution at their school, with trends being used to build evidence for behaviour change actions. The project has 10 Environmental Protection Agencies (EPAs) across Europe participating. Learn About Air⁵¹ is a dedicated teaching resource, linked to Scotland's Curriculum for Excellence, for pupils to learn about air quality, the impact it has on their lives and how they can influence it. It also provides a powerful mechanism to feed this message back into the pupil's home environment, thus reaching the wider population.

⁴⁹ <http://www.scottishairquality.scot/>

⁵⁰ <https://uk-air.defra.gov.uk/library/ageg/pollution-sensors.php>

⁵¹ <http://www.learnaboutair.com/SEPA/>

Remote sensing

72. At the other end of the data collection scale are remote sensing technologies. Satellite observations can provide extensive spatial and temporal coverage, not just for air pollutant concentrations – with current technology being capable of measuring all the main air pollutants - but for related climatic, meteorological and land use parameters. Whilst the resolution is typically coarser than ground instruments (although this is improving as the technology becomes more advanced) satellite measurements provide full spatial coverage, capable of addressing gaps in areas with little data from other sources. Remote sensing can also be used to support validation of emissions estimates by low cost sensors, besides enabling enhanced forecasting of regional and transboundary air pollution events.

73. The potential for remote sensing to support and enhance standard approaches to air quality monitoring and modelling in a similar way to low cost sensors has not to date been explored in detail in Scotland but will be considered further as part of the implementation of this strategy, taking account of work in this area being progressed by other organisations such as SEPA and the Environment Agency.

Traffic data

74. Good quality data are essential for making key decisions. Historically though, traffic data has rarely been collected for direct application to air quality management and improvement, even though many geographic and time specific data gathering exercises have been undertaken by central and local government for particular purposes. There is currently no systematic long term approach to gathering traffic data at a large scale for environmental purposes, and improvements are thus needed in both robustness and utility. This has begun to change in recent years with the introduction of the National Modelling Framework for Scotland (NMF), which provides the basis for a national approach to both local and regional air quality modelling. However the development of detailed local models for Aberdeen, Dundee, Edinburgh and Glasgow to provide the evidence base for Low Emission Zone (LEZ) introduction in these cities⁵² was only made possible by undertaking detailed one off traffic data collections. This contrasts with the well established approaches for collecting air quality and other environmental data.

75. Traffic interventions to reduce emissions should be based on the best possible transport data that reflects vehicle/people movements and mode choice. The NTS2 calls for an improvement in the quality and availability of information to enable organisations and individuals to (1) plan their journeys in the most cost effective or time efficient way (particularly where an interchange is needed) and (2) inform transport fleet management decisions. We must make it as easy as possible for people to make informed travel choices and encourage more sustainable travel. This will require information to be available that is as close to real time as possible, relevant, reliable and easy to both access and use.

⁵² <https://www.lowemissionzones.scot/>

76. Information may relate to air pollution monitoring data derived from a mix of sourcing including reference and low cost sensor networks, real world vehicle data and various ITS solutions including traffic counts and Automatic Number Plate Recognition cameras. Consideration should also be given to emerging or future third party datasets such as satnav data or mobiles phone locational services, which currently help to support congestion detection and support journey planning, along with future connected vehicle datasets⁵³.

77. Data sharing between transport agencies and the likes of SEPA, local authorities, the NHS, Public Health Scotland and Police Scotland should also be promoted. Ideally, the information should be stored and managed in a way that allows multiple data sources to be captured and accessed easily whilst complying with GDPR.

78. The Scottish Government implemented a real-world vehicle emission monitoring programme in 2019 using remote sensing technology. Over 300,000 data points were collected on the trunk road network around Edinburgh during October 2019 and February 2020.

79. Remote sensing on local and trunk roads improves our understanding of real-world fleet emissions including insight into the performance of emission abatement retrofit technology on fleet vehicles (which the Scottish Government is also funding) and the potential to detect emission defeat-device technology.

Actions

We will:

- Commission a review of air quality data collection and reporting in Scotland. The review will identify any notable gaps in data provision, with recommendations on how to fill these. The review will also provide recommendations on how current air quality data and methodologies can be more effectively integrated with other datasets, particularly those relating to transport and human health.
- Commission research to explore the potential of utilising satellite data to complement air quality monitoring.
- Develop an approach for standardised annual collection and storage of traffic data which can be used for multiple purposes, including air quality management.
- Undertake a review of road transport data capture and associated gaps with relevance to air quality.

⁵³ Cooperative Intelligent Transport Systems (C-ITS) refers to transport systems, where there is a wireless data exchange between two or more ITS sub-systems (personal, vehicle, roadside and central) which will support a number of information, warning and assistance services which will be gradually deployed during the oncoming years.

- Collect transport data within Air Quality Management Areas and beyond to support air pollution mitigation planning, following the good practice established by SEPA's National Modelling Framework (NMF)⁵⁴.
- Explore options for transport, air quality and health data-sharing between relevant public bodies.
- Provide guidance to local authorities on how best to always commission traffic data collection in a way that supports local air quality objectives.
- Establish a comprehensive network of cutting-edge remote sensing air quality monitors on local and trunk roads in the early 2020s.

Question on data

6. Do you agree with the package of actions put forward in the data chapter?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments to support your answer

7. Do you have any suggestions on the approach for annual collection of traffic data for air quality management purposes?

⁵⁴ Detailed and tailored traffic and air quality data collection exercises between 2017 and 2020 in Scotland's 4 major cities have underpinned the development of the NMF. The NMF provides a two-tiered standardised approach to modelling air quality at both local and regional levels using a nationally consistent methodology. The city models inform LEZ design decision making whilst the regional model offers an air quality assessment-based tool within and across neighbouring local authority areas associated with large-scale planned developments.

5. Public Engagement and Behaviour Change

80. Public information provision, awareness and behavioural change are interlinked and integral to the delivery of long term sustained change in environmental quality generally and air pollution specifically.

81. Our proposals on public engagement and behaviour change are informed by a review of evidence around public attitudes and behaviour relating to air quality, undertaken by the University of the West of England. The review report was published in August 2020⁵⁵.

82. The review showed that there is limited evidence available on public perceptions specifically of air quality in Scotland. The review therefore also encompassed emission-generating activities (e.g. transport/travel, domestic energy) and related issues (low carbon, climate change, energy production). Based on the wide range of studies identified in this broader context, there appears to be a strong awareness of, and engagement with, air quality and climate change issues, at least in certain sectors of society in Scotland. There are however, significant barriers to engagement and, importantly, behaviour change, particularly amongst deprived communities.

83. As with public perception, limited research on public engagement around air quality issues has been undertaken in Scotland. Accordingly, the range of evidence covered in the review was widened, both in terms of the issues covered and geographically. This resulted in the identification of a range of public engagement approaches, from communication tools, traditional questionnaires and focus groups, to more participatory citizen panels, citizen science, living labs and co-creation, and novel techniques using social media and gamification.

84. The review highlighted that air quality behaviours are informed by many complex factors that need to be considered when designing meaningful and effective future engagement. Effective public engagement should draw upon an assortment of different approaches, using materials from other successful strategies to build a coordinated suite of multi-media initiatives. Support from communications experts and commitment from a range of actors, e.g. national and local government, public health agencies, public transport providers, businesses and schools is also required. Planned long term monitoring and evaluation should be designed into the campaign to identify the effectiveness of strategies, and to allow organisers to learn from the successes and follow up on areas of weakness. Coupling evaluation with evidence on how public engagement has contributed can create a feedback exchange, and also enable citizens to reflect on their experiences in a more informed way. Furthermore, the engagement strategy, materials and evaluation reports should be transparent and publicly available to allow others to benefit.

85. Based on the review of current evidence, the following recommendations are made as a basis for future public engagement on air quality issues in general terms and specifically for developing a public engagement strategy on air quality in Scotland:

⁵⁵ www.gov.scot/isbn/9781839607745

- Consider a holistic approach that reflects citizens' lived experiences rather than focusing exclusively on air quality.
- Use a range of pre-piloted engagement approaches, informed by communications and subject experts.
- Ensure engagement approaches are inclusive of all sectors of society and appropriately communicated.
- Target specific groups separately, e.g. vulnerable groups, user groups.
- Gain support from and include a range of actors, e.g. national and local government, public health agencies, public transport providers, businesses, agricultural industry and schools.
- Research the affected communities and actively engage with them to understand the socio-cultural contexts and complexities of their needs.
- Co-create solutions that work for the affected communities, through citizens' panels, and 'living labs', ensuring participants are demographically representative.
- Support citizen-led engagement events and activities, e.g. citizen science.
- Ensure promoted behavioural changes are easier, more convenient and preferably cheaper than the status quo.
- Incorporate information on ammonia and the impacts of atmospheric nitrogen pollution on biodiversity more generally into public information about air quality.
- Raise awareness responsibly, ensuring that risk perceptions and data interpretation are managed and achievable behavioural responses are provided.
- Focus communication on health and environmental impacts, rather than concentrations or emissions.
- Use change agents, influencers and middle actors to help raise awareness and promote behaviour change to affect normative behaviours.
- Use social media to spread awareness through wider social connections and families.
- Initiate further research and programmes of action to raise awareness of and engagement in the issue of atmospheric nitrogen pollution.
- Plan longitudinal monitoring and evaluation, coupled with citizen feedback, into the public engagement design.
- Ensure materials and evaluation are made available to benefit other public engagement strategies.

86. The review also identified several evidence gaps which need to be addressed. Key issues include real or perceived barriers to uptake of low/zero emission vehicles and further modal shift to public transport and active travel, alongside associated behavioural drivers. Similar issues around switching to low/zero emission energy sources also require consideration.

87. A useful starting point could be a baseline survey to identify, in a Scotland specific context, current awareness of health effects of air pollution and source contributors.

Actions

We will:

- Develop a public engagement strategy on air quality in Scotland, taking into account the recommendations from the evidence review.
- Undertake a baseline survey of current awareness amongst the Scottish public of air pollution health effects and source contributors.

Question on public engagement and behaviour change

8. Do you agree with the package of measures put forward in the public engagement and behaviour change chapter?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments to support your answer

6. Industrial Emissions Regulation

88. Emissions from industrial activities in Scotland have been subject to increasingly strict regulation since the mid 1990s as a result of Scottish, UK and EU legislation and policy implementation. SEPA has been recording the mass emissions from the largest regulated sites since 2002 using its Scottish Pollutant Release Inventory (SPRI) which collates data for a wide range of pollutants⁵⁶. Emissions from industry can be variable as controls are typically set based on emission limit values (ELVs) from point sources (rather than mass emissions from the installation as a whole). As a result, emissions can fluctuate over time due to production needs, but still be in full compliance with permit conditions. A summary of the emission trends from SEPA regulated sites since 2002 is included in the CAFS review emissions working group report⁵⁷.

89. The provisions of this regulatory framework are wide ranging, comprehensive and provide a good level of protection for the environment as a whole, using the principles of best available techniques (BAT). Therefore any scope for requiring further reductions of air pollutant emissions on a compulsory basis must be considered very carefully. Any environmental benefits must be balanced against costs of regulation (for both industry and SEPA) and a robust justification provided for additional controls. Nevertheless, SEPA is currently working with 15 sectors which partially or fully cover industrial emission sources to encourage them to move beyond compliance on a voluntary basis.

Sector plan approach

90. SEPA can work with regulated business through sector plans to help drive improvement across environmental media as well as influencing circular economy choices. Air pollution is considered a cross cutting issue in sector plans. By their nature, sector plans deal with issues which can contribute to emissions to air. For example, all sectors will use transport for materials, goods and people. This is likely to be the single largest source of uncontrolled emissions from any sector, on its own or in combination, for both air pollution and greenhouse gas emissions.

91. Sector-specific emissions of air pollution (such as point source releases, materials handling and fugitive emissions) are likely to be controlled through SEPA's existing regulatory tools such as permitting, inspection and enforcement (e.g. via PPC and WML). A core concept of industrial regulation in SEPA is continual improvement and in most cases, mandatory environmental performance standards will drive any dynamic improvement on a cyclical basis. The sector plans will act as an additional focus, by providing enhanced clarity on pre-existing mandatory standards.

Beyond compliance

92. SEPA believe that those societies and economies that are low resource use, low energy use, low water use and low waste will be the most successful in the 21st century. Beyond compliance is about businesses choosing to go further than the

⁵⁶ <https://www.sepa.org.uk/environment/environmental-data/spri/>

⁵⁷ <http://www.scottishairquality.scot/assets/documents/Emissions-Working-Group-Report.pdf>

environmental obligations that are placed upon them. These progressive businesses will view environmental excellence as an opportunity, not a problem. This can include looking at suppliers, auditing processes and evaluating buildings, fittings and equipment. SEPA will work with partners to support businesses that choose to implement these types of beyond compliance opportunities and achieve environmental, economic and social benefits. Many actions to reduce impacts on climate change, such as reducing fuel use or switching to alternative fuel sources, are often likely to be cost effective, and have co-benefits for outcomes such as air quality.

Non-exhaust emissions and Non-Road Mobile Machinery

93. Non-exhaust emissions (NEE) from road traffic are particles that arise from the wear of brakes, tyres and the road surface and from the resuspension of road dust⁵⁸. NEE are significant contributors to particulate emissions from road transport, with particles from brake wear, tyre wear and road surface wear constituting 60% of primary PM_{2.5} and 73% of primary PM₁₀ (by mass) from road transport⁵⁹⁶⁰.

94. Strategies to mitigate NEE from road traffic can be split broadly into traffic management, behaviours and legislation/standards. A number of opportunities exist for the Scottish Government to contribute into the emerging science of road traffic NEE during the life of CAFS 2.

95. Non-Road Mobile Machinery⁶¹ (NRMM) covers construction plant, transportation refrigeration units (TRU) or some agricultural machinery. NRMM does not utilise the Euro emission standards as adopted by vehicles. Rather, the UK Government introduced new legislation via the Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018⁶², where the most recent NRMM stage is Stage V⁶³. However, not all NRMM machinery will comply with the Stage V level as they were manufactured before the 2018 Regulations were established.

96. In relation to construction NRMM, the Scottish Government will publish construction NRMM guidance based on existing industry-led guidelines such as the Supply Chain Sustainability School via their Plant Charter⁶⁴ and the London NRMM guidelines. Guidance would focus on construction projects in AQMAs, cover construction NRMM with a net power rating of between 37kW and 560kW and seek to progressively tighten over time using the NRMM engine emission 'stages'.

⁵⁸ https://uk-air.defra.gov.uk/library/reports.php?report_id=992

⁵⁹ It is worth noting the cautionary tone offered by the Air Quality Expert Group (AQEG) around NEE data, where they state that: 'Quantitative data on the magnitude of non-exhaust emissions are sparse and highly uncertain...NEE emission factors used in inventories have a wide span of uncertainty – greater than a factor of two is typical – including considerable uncertainty in splits between PM₁₀ and PM_{2.5} size fractions. The emission factors are also largely based on data from the 1990s and have not evolved as vehicle designs and fleet composition have changed, in contrast to the regularly updated factors used for exhaust emissions.'

⁶⁰ To place these figures into context, the NEE emission represent 7.4% and 8.5% respectively for all UK primary PM_{2.5} and PM₁₀ emissions

⁶¹ <https://www.vehicle-certification-agency.gov.uk/other/non-road-mobile-mach.asp>

⁶² <http://www.legislation.gov.uk/ukSI/2018/764/made>

⁶³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691313/improving-air-quality-non-road-mobile-machinery-condoc.pdf

⁶⁴ <https://www.supplychainschool.co.uk/wp-content/uploads/2020/06/Plant-Charter-0420.pdf>

97. TRU systems in light and heavy commercial vehicles are powered by either an auxiliary diesel unit or a direct belt drive linked to the vehicle engine. The NO_x and PM emissions per kilometre travelled for TRUs are substantially poorer when compared to the Euro VI emissions from diesel vehicles exhausts⁶⁵. One key challenge is that auxTRU diesel units can often be below the 19kW cut-off limit for compression-ignition engines in NRMM regulations⁶⁶ which means that they do not need to comply with any emissions standard.

98. There is no single legal, operational, behavioural or technological solution to reduce TRU emissions. Therefore, the Scottish Government will develop an emissions impact and evidence base on TRU emissions with research into emissions testing of TRUs to develop an applicable emissions factor, along with encouraging the use of direct drive electrically powered TRUs and collaborating with the UK Government to implement stricter emission standards on TRUs and encourage the creation of TRU legal standards for new and existing vehicles.

99. Areas for possible further consideration include:

- The environmental benefit in bringing currently unregulated sectors (which have not been prescribed by EU legislation) such as non-waste anaerobic digestion into existing legal frameworks; and
- reviewing the current legal framework to investigate whether all appropriate industrial sectors are subject to regulation, to identify and remove legal gaps and ambiguities from legislation and investigate the use of general binding rules (GBRs) for ensuring compliance with codes of practice.

100. Even without taking these additional points into account, implementing EU requirements into domestic legislation has demonstrated that controls placed on industry are proportionate and effective in reducing emissions. Therefore, provided current EU requirements are maintained in Scotland following the UK's exit from the EU, further emissions reductions should be achievable, with additional benefits for air quality.

⁶⁵ <https://www.airqualitynews.com/wp-content/uploads/2015/09/Liquid-Air-on-the-European-Highway.pdf> and <https://dearman.co.uk/wp-content/uploads/2018/09/Leeds-Dearman-auxTRU-report-2.3-Dissemination.pdf>

⁶⁶ <http://content.tfl.gov.uk/auxiliary-temperature-reduction-units-in-the-greater-london-area.pdf>

Actions

We will:

- Ensure that EU standards and principles relating to emissions of air pollutants continue to apply in Scotland following the UK's exit from the EU.
- Utilise SEPA's sector plan approach to encourage businesses to go beyond compliance to achieve further reduction in air pollutants and greenhouse gas emissions.
- As part of the review of the Clean Air Act (see domestic burning actions), address the regulatory gap relating to stack height assessment for SEPA permitted sites.
- Explore opportunities across traffic management, behaviours and legislation/standards to reduce NEE from road traffic.
- Contribute into research to develop a consistent method of measuring NEE from road traffic, in order to improve the understanding of NEE emissions in Scotland.
- Engage with industry to produce guidance on requirements for gaseous and particulate emissions from NRMM in the construction sector.
- Develop an emission impact and evidence base on TRU emissions.

Questions on industrial emissions regulation

The below questions relate to the industrial emissions regulation chapter of the CAFS 2 strategy. There is an opportunity to comment generally on the package of actions we intend to deliver, as well as two further questions relating to specific actions. Please note that domestic (household) combustion emissions and agricultural emissions are covered in Chapter 7 and transport emissions are covered in Chapter 8 of this consultation paper.

9. Do you agree with the package of actions put forward in the Emissions Regulation chapter?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments to support your answer

10. Should currently unregulated sectors such as non-waste anaerobic digestion and non-road mobile machinery be brought into existing legal frameworks?

- A) Yes
- B) No
- C) Don't know

Please explain your answer

7. Tackling Non Transport Emissions Sources

101. Although the contribution of all the major emissions sources to overall air pollution levels was highlighted in CAFS, the focus in terms of actions was very much on transport emissions. Whilst road transport in urban areas remains the issue of most concern in relation to air quality and its impact on human health, the CAFS review emphasised the need for a greater focus on other sectors, notably domestic (household) combustion and agriculture.

Domestic (household) combustion

102. The main pollutants of concern arising from domestic combustion are PM₁₀, PM_{2.5}, nitrogen dioxide and sulphur dioxide. A summary of domestic combustion emission sources, pollutants and trends in Scotland can be found in the CAFS review emissions working group report.

103. The continuing uncertainty over emissions levels from domestic burning means that setting precise reduction targets is difficult. Further research into the proportion of emissions attributable to domestic burning, as well as assessment of type and source of emissions, is required. Further targeted monitoring of PM_{2.5} levels particularly in urban areas is desirable, subject to finding an agreed method of measurement. A further complicating factor is that around 50% of local ambient PM_{2.5} concentrations can relate to long-range transboundary transport from outwith Scotland⁶⁷. This suggests that a consistent national, as opposed to local, approach will have a large impact on reducing domestic combustion emissions.

104. Actions to tackle domestic sources of air pollution need to be coordinated with related policies and actions, especially those included in the updated Climate Change Plan and those targeted at building standards and energy efficiency. The upcoming Heat Decarbonisation Policy Statement and updated Energy Efficient Scotland Routemap will set out our policy proposals and actions to drive down emissions from heating our homes and buildings. This is central to meeting the ambitious climate change targets set out in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. As well as delivering reductions in CO₂ emissions, these actions will also contribute to reduced air pollution by reducing the need for supplementary domestic heating. The Committee on Climate Change (CCC), which is the Scottish Government's statutory advisor on climate change, produced a report in 2018, *Biomass in a Low Carbon Economy*⁶⁸, which explored how biomass could be prioritised for the most valuable end use. The CCC recommended a transition on the use of biomass towards construction and Bioenergy Carbon Capture and Storage (BECCS), recommending that government support moves away from biomass boilers to heat buildings where there are other low carbon alternatives.

⁶⁷ https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1910031755_DA_Air_Pollutant_Inventories_1990-2017_Issue_1.1.pdf

⁶⁸ <https://www.theccc.org.uk/publication/biomass-in-a-low-carbon-economy/>

105. We know that 79% of households using solid mineral fuel in Scotland as their primary fuel type are in rural areas⁶⁹ and that around half of households (46%) using solid mineral fuels in Scotland are fuel poor compared to the national average of 25%. Emissions from burning wood depend on the type of appliance and the dryness of the wood. Other factors include the way the householder burns the wood and uses any appliance. Maintenance of the appliance and the chimney also have an impact. Burning practices have an important influence. For solid fuel, the amount of sulphur released depends on the sulphur content of the fuel.

106. Current legislation for controlling domestic combustion emissions derives from the Clean Air Act 1993 and associated regulations. This is based around the establishment of Smoke Control Areas (SCAs). Only appliances which have passed tests to demonstrate that they emit a minimal level of smoke are permitted for use in SCAs. Similar tests apply for fuels; only exempted fuels can be used in non permitted appliances. However the Clean Air Act provisions are becoming increasingly outdated and have little relevance to modern air quality legislation. This results in the anomaly that appliances and fuels may pass the SCA tests without necessarily being compliant with LAQM air quality objectives.

107. In addition, the provisions are difficult for local authorities to enforce and are poorly understood by members of the public. They also do nothing to address the impact of domestic combustion emissions outwith SCAs, nor the recent trend to install woodburning stoves in urban areas as a secondary or amenity heating source. The SCA approach is therefore to a large extent ineffective in ensuring that air pollution from domestic combustion is properly controlled.

108. At present flues which form part of a domestic biomass system have permitted development rights (PDR), meaning that, in many cases, an application for planning permission is not required for installation. The internal elements of the biomass system (including the furnace) do not require planning permission. In the absence of other control mechanisms it is difficult for local authorities to accurately assess the amount and location of appliances in their areas. In urban areas, it is often the cumulative effect of a number of appliances in a relatively small geographic area which makes a notable contribution to overall emissions, rather than emissions from an individual stove or fireplace, although locally it may be a single particular installation and its use which causes immediate concern for some residents. Planning permission is required for flues located within an Air Quality Management Area, where they are attached to the principal elevation of a building in a conservation area or World Heritage Site, or if the flue projects more than one metre from the wall or roof. This latter provision in particular can have unintended consequences in that a flue under one metre in height may well provide inadequate dispersion of pollutants, although the flue height to ensure dispersal of pollutants is likely to be unique to each installation.

109. Defra's Clean Air Strategy for England⁷⁰ sets out several proposals for addressing domestic combustion emissions that would also be of relevance in Scotland. The proposals cover both appliances and fuels, and focus on three key

⁶⁹ <https://www.gov.scot/collections/scottish-house-condition-survey/>

⁷⁰ <https://www.gov.uk/government/publications/clean-air-strategy-2019>

areas: the right appliance burning the right fuel, consumer education and proper installation/maintenance.

110. For appliances, the focus is on implementing and promoting Ecodesign⁷¹, the EU wide programme to lower emissions and improve efficiency. The Ecodesign legislation forms part of retained EU law and will therefore continue to have effect after the UK's exit from the EU. Although the Ecodesign standards do not have legal effect until 2022, the stove industry has commenced initiatives to promote early uptake. The Stove Industry Alliance (SIA) is marketing Ecodesign Ready stoves, of which there are already over 400 models available, accounting for around 40% of current sales UK wide. The SIA is also currently developing a scheme that will encourage appliance manufacturers to produce appliances with even lower emissions than the Ecodesign requirements. Consumers will be able to clearly identify stoves with lower emissions than Ecodesign from the accreditation label. The PM limit in Ecodesign is 55% lower than in the current UK testing regime for exempting appliances for use in SCAs.

111. Ecodesign standards only apply to new appliances. Therefore a concerted effort is needed to encourage householders to replace their open fires and upgrade their existing stoves, given the significant emissions reductions that this will achieve (90% for open fires and, depending on the age of the appliance, up to 80% for stoves).

112. For fuels, additional support for local authorities can be provided by enforcing standards at point of sale rather than at point of use. Enforcement through trading standards in this way would mean retailers facing significantly greater scrutiny and detection of infringements. This approach can be further enhanced by restricting or banning the sale of the most polluting fuels, and ensuring that remaining fuels are used in such a way that emissions are minimised. Reducing the moisture content of wood for burning is especially important in this context, with dried wood (less than 20% moisture content) having around 80% lower emissions than wet wood. Woodsure, the UK's woodfuel accreditation scheme, launched the Ready to Burn⁷² scheme in 2017 which provides a certification mark to woodfuel suppliers who can demonstrate that the moisture content of their product is below 20%.

113. Education for consumers is also important, both in terms of correct operation of appliances and using the right fuel for the appliance. Burnright⁷³ is an educational campaign which provides a range of materials and resources for stove users. Advice and support is also available to households looking to switch to a low-carbon heating solution via Home Energy Scotland⁷⁴.

114. It is also important to consider the impact of non domestic biomass emissions. In 2017 the Scottish Government published its energy strategy⁷⁵ which sets out a vision for energy production and use in Scotland to 2050. Meeting the ambitious targets set out in that strategy will require a range of energy sources to be utilised, including biomass.

⁷¹ <https://op.europa.eu/en/publication-detail/-/publication/c6ccf626-2f6d-11e5-9f85-01aa75ed71a1/language-en>

⁷² <https://www.woodsurre.co.uk/firewood-ready-to-burn/>

⁷³ <https://burnright.co.uk/>

⁷⁴ <https://energysavingtrust.org.uk/scotland/home-energy-scotland>

⁷⁵ <https://www2.gov.scot/energystrategy>

115. In general, the larger the biomass unit, the easier it is to control the combustion conditions and therefore the easier it is to reduce the level of air pollution emissions. A single large boiler will tend to produce lower emissions than a series of smaller units using the same fuel and for the same energy output. It is more difficult to fit additional pollution abatement equipment to smaller units, and so emission reductions must rely on good boiler design, operation and maintenance. This lower size range includes most small scale domestic wood burning stoves and boilers. Encouraging the use of plant scaled to make best use of available heat and biomass resource, for example in conjunction with the development of heat networks, will result in a system where air quality emissions are easier to control than from a larger number of small plant.

116. Where certain conditions are met, the impacts of biomass deployment for heat production can be managed to minimise impacts on local air quality. These conditions are:

- all new biomass plant are of high quality, corresponding to the best performing units currently on the market;
- the majority of biomass heat uptake replaces or displaces existing coal and oil fired heating;
- the majority of uptake is located off the gas grid and therefore generally away from densely populated urban areas; and
- levels of uptake where a local authority has declared an AQMA are substantially lower than other areas.

117. As conditions move away from this scenario, the adverse/negative impacts on air quality and public health increase significantly.

Actions

We will:

- Encourage uptake of Ecodesign stoves through Ecodesign Ready and other initiatives, along with consideration of how best to address widespread replacement of pre Ecodesign appliances.
- Work with business and industry to support educational schemes such as Woodsure and Ready to Burn, including manufacturers, suppliers and users of both fuels and appliances.
- Take forward, working with businesses that may be affected and other interested parties, potential measures to control the supply of the most polluting domestic fuels – including a ban on house coal, restricting the sulphur content of smokeless fuels to 2% and prohibiting the sale of wet wood. In taking forward this work, we are mindful that any new measures would require to be implemented over a period of time, such as a transitional period during which businesses could adapt to the new requirements without disproportionate costs.

- In developing policies and programmes to support households and businesses in transitioning to low-carbon heating solutions, we will consider the needs of those affected by any ban on house coal and wet wood.
- Consider with local government what changes are needed to the current permitted development rights for flues for woodburning stoves and biomass boilers.
- Work with local government and SEPA to consider revision of the Clean Air Act 1993.
- Commission work to provide further evidence on the proportion of PM emissions and other key pollutants attributable to domestic burning in Scotland, together with geographic and demographic distribution of domestic burning.

Question on domestic (household) combustion emissions:

Please note that industrial emissions are covered in chapter 6, and transport emissions are covered in chapter 8 of this consultation paper.

11. Do you agree with the package of actions put forward to reduce the impact of domestic (household) combustion?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

12. What potential impacts might the package of actions put forward have on households and businesses?

Agriculture

118. Agricultural emissions related to air quality are dominated by ammonia (NH₃) and as such agriculture accounts for around 90% of total ammonia emissions in Scotland. Unlike emissions of the other main air pollutants, which have declined significantly over the last 30 years, ammonia levels have decreased by only around 12% in this period. Even this modest reduction has started to reverse slightly since 2012. Sources such as large intensive pig and poultry units above certain capacities are classed as industrial installations, and are regulated under the Industrial Emissions Directive and the Pollution Prevention and Control (Scotland) Regulations 2012⁷⁶ (paragraph 127 provides further detail on this). However, there are currently no regulatory mechanisms in place in the UK for other agricultural ammonia emission sources, which make up the bulk of emissions. Further background on ammonia can be found in the CAFS review emissions working group report.

119. Ammonia is a nitrogen-based gas which is released when slurries, manures and nitrogen fertilisers come into contact with the air. It is very reactive and combines readily with acids and particulates. These chemical reaction products have a longer atmospheric lifetime, are harmful to human health and result in regional and long-range transport of nitrogen compounds. As air pollution does not stop at country boundaries, pollutants emitted both within Scotland and elsewhere can contribute to impacts a long distance away. The resulting pollution through ammonia and reaction products therefore occurs both close to sources and at greater distances (including remote areas of Scotland) through atmospheric dispersion and deposition onto sensitive vegetation. Nitrogen deposition (from both ammonia emissions and nitrogen oxides) effectively provides fertiliser from the air, leading to the eutrophication of our naturally nutrient-poor ecosystems and related damage to plant and animal species through eutrophication and acidification. Ammonia also produces odours and related nuisance effect, thereby impacting on both human and ecosystem health.

120. The most effective measures to reduce these impacts are those which directly reduce emissions of ammonia to the atmosphere, as opposed to attempting to introduce post emission mitigation. Other emission mitigation strategies can also be useful and include physical separation of sensitive receptors from local sources through planning interventions (pre-emission) and the use of shelterbelts to enhance both dispersion through increasing turbulence and recapture of ammonia close to source (post-emission, secondary mitigation).

121. Ammonia, and therefore nitrogen content of fertiliser, can be lost whenever slurry or manure is exposed to the atmosphere; practices that reduce exposure in housing, storage or during application can therefore reduce losses and result in more efficient use. Retaining as much nitrogen as possible by reducing losses to the atmosphere or leaching into e.g. ground or surface water bodies will maximise nitrogen use efficiency and thus optimise returns on farm. However, care must be taken and measures will need to carefully assess any potential pollution-swapping,

⁷⁶ <https://www.legislation.gov.uk/ssi/2012/360/contents>

e.g. when reducing emissions to air may lead to increased leaching into ground water and eutrophication of water bodies.

122. The Gothenburg Protocol requires countries to produce a national advisory code of good agricultural practice to control ammonia emissions. Guidance was provided in the UNECE Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions⁷⁷ and in Options for Ammonia Mitigation from the Task Force on Reactive Nitrogen⁷⁸. Therefore the development of such a code of practice within Scotland has been identified as requiring consideration. Although similar codes have either been or are being produced in other parts of the UK, Scotland's climate, soils, topography and agricultural practices will need to be considered to inform the development of any such Scottish guidance.

123. Recent work done on the health and environment impacts, and on the costs and benefits of ammonia reduction measures, by the Air Quality Expert Group⁷⁹ and others^{80,81} is a useful basis for considering the range of issues which needs to be covered. There is already good awareness on many farms of measures to improve nitrogen and wider nutrient use efficiency through good soil, fertiliser, manure and slurry management practices. However increasing awareness and implementation of these measures can help to further reduce ammonia emissions. Given that the effects on human health and ecosystems/biodiversity of agricultural ammonia emissions and other pollutants have not received significant attention in air quality policy to date, there is a need to ensure that there is a strong focus on education, engagement and awareness raising around good practice.

124. While there are opportunities to deliver both emission reductions and improved business performance and sustainability through guidance, mitigation practices may require investment in infrastructure and new equipment, such as low-emission slurry spreading equipment or covers for slurry storage. The Scottish Government has already taken action to support farmers to make such investments through the pilot Sustainable Agriculture Capital Grant Scheme. Through the Farming and Food Production Future Policy Group and Beef Suckler Climate Group consideration is being given to how the agricultural industry can be strategically supported in the investments needed to transition to a sustainable low emission future, both in terms of ammonia and greenhouse gases. Given the synergies between the practices that can mitigate ammonia emissions and greenhouse gases it is clear that action must be considered as part of the wider work of the Climate Change Plan and its update in light of Scotland's new net zero greenhouse gas emissions targets. This consultation provides the agriculture and wider land management sectors the opportunity to offer considerations on how to target these complex messages to farmers.

125. Related to the lack of direct policy focus, in Scotland until recently there has been little coverage of ammonia in the agricultural press. Consequently there is generally relatively poor awareness of this issue across the sector. Therefore, a productive approach to initial engagement with the sector could be to ensure that

⁷⁷ <https://www.unece.org/index.php?id=41358>

⁷⁸ http://www.clrtap-ffrn.org/sites/clrtap-tfm.org/files/documents/AGD_final_file.pdf

⁷⁹ https://uk-air.defra.gov.uk/assets/documents/reports/ageg/2800829_Agricultural_emissions_vfinal2.pdf

⁸⁰ https://www.rand.org/content/dam/rand/pubs/research_reports/RR2600/RR2695/RAND_RR2695.pdf

⁸¹ <https://www.springer.com/gp/book/9789401797214>

ammonia emissions feature prominently within farmer focused messages on nutrient management and related good practice. The concept of retaining the nutrient value of manures and fertilisers coupled with messaging related to increased productivity and lower costs has helped to promote positive engagement and this should continue to be the case moving forward. It will also important to recognise that, in addition to the direct gains that farmers achieve through reduced ammonia emissions, there is also a positive impact on human and environmental health.

126. The creation of a nitrogen balance sheet (NBS) for the country (see para 19 above) will provide a baseline on Scotland's current nitrogen use efficiency, i.e. the proportion of nitrogen used for its intended purpose vs. losses to the environment. This baseline creates a new type of cross-sectoral evidence base that quantifies the uses and losses of nitrogen and enables identification of more and less nitrogen use-efficient processes, and will inform future decision-making across a range of policy areas. These include agriculture, as well as climate change, air quality, transport and waste management, among others. A national-scale NBS also enables tracking of progress over time and dialogue to focus on policies that provide win-win outcomes rather than shifting nitrogen losses within or between sectors. From the CAFS perspective, the NBS will be an important tool for assessing progress with ammonia reduction approaches to be included in the code of good practice for agriculture (as well as for progress with nitrogen emissions from combustion).

127. The fact that, almost uniquely amongst the main air pollutants, ammonia levels have not fallen significantly suggests that additional interventions are now required to address issues in the agriculture sector, through awareness raising and supporting farmers and crofters to take up best practice measures. This includes the need to ensure better management of fertiliser application and management in relation to dairy and beef as well as pig and poultry units, both in general terms and specifically where there is proximity to urban areas and sensitive ecosystems. Tackling these should also help to address odour complaints. Large intensive pig and poultry units are already regulated (see paragraph 118). These are sites which have a capacity of more than 40,000 poultry, 2,000 pigs or 700 sows. Further consideration with the sector is required on options to reduce emissions from large scale units, including whether currently unregulated activities be brought into consideration in existing legal frameworks, alongside an improved understanding of the implications of these options.

128. In a wider agricultural context, the Muirburn Code⁸² advises land managers and others on best practice and legislation regarding the use of fire as a land management tool. The Code, which was most recently updated in 2017, does not consider in detail the health and amenity impacts of visible smokes. This is an issue requiring further consideration.

⁸² <https://www.nature.scot/sites/default/files/2017-11/Guidance%20-%20Management%20of%20Moorland%20-%20Muirburn%20Code.pdf>

Actions

We will:

- Continue to share best practice and raise awareness of air pollutants and greenhouse gases, along with actions that farmers and crofters can take to minimise their environmental impact while improving efficiency.
- Work with farmers through farmer-led groups, supported by scientific and economic expertise to co-develop new ways of working to better contribute towards delivering Scotland's climate change and environmental outcomes.
- Consider options to reduce emissions from large scale units in consultation with the agricultural sector, aligning with broader policy development around future rural support.
- Work together with SEPA and the agricultural industry to develop a voluntary code of good agricultural practice for improving air quality in Scotland.
- Undertake a specific assessment of visible smokes and their health and amenity impacts arising from muirburn. The assessment will consider pollution characteristics and downwind impacts into populated areas, along with appropriate management responses and interventions.

Questions on agricultural emissions

Please note that industrial emissions are covered in chapter 6, and transport emissions are covered in chapter 8 of this consultation paper.

13. Do you agree with the package of actions put forward in the agricultural section?
- A) Yes
 - B) No
 - C) Neither agree nor disagree

Additional comments in support of your answer

14. We will work together with SEPA and the agricultural industry to develop a voluntary code of good agricultural practice for improving air quality in Scotland. Do you agree with this approach to tackling ammonia emissions from farming?

- A) Yes
- B) No
- C) Neither agree nor disagree

Please explain your answer

15. Any voluntary code of good agricultural practice could be subject to an early review process to assess its effectiveness and compliance. If the review indicates that insufficient progress is being made, the need for direct regulatory intervention will be considered. Do you agree with this approach?

- A) Yes
- B) No
- C) Neither agree nor disagree

Please explain your answer

Nitrogen deposition and environmental impacts

129. Compared with human health effects, the damage caused by air pollution on ecosystems may be less obvious and more difficult to identify on the ground (due to specialist knowledge needed to identify symptoms), and it remains important to disseminate knowledge on how to spot signs and raise awareness. Poor air quality and direct deposition of pollutants can cause damage to plants and animals, and to aquatic and terrestrial ecosystems, impacting on biodiversity through its contribution to eutrophication, acidification and otherwise damaging sensitive habitats. This can result in species loss, habitat composition changes and increased sensitivity of organisms to environmental stresses.

130. Eutrophication is caused by deposition of oxides of nitrogen and ammonia. Nitrogen oxides can travel long distances in the atmosphere before being deposited, affecting upland and montane areas, while ammonia is shorter-lived and deposited close to its source, more often affecting Scotland's lowland areas. Emissions of

nitrogen oxides have decreased considerably since peaking in the period 1970-1990, and this has led to considerable decreases in N deposition across the UK. The much more modest emission reductions of ammonia since the 1980s have also contributed to deposition reductions, but to a lesser extent due to changes in atmospheric chemistry. These changes, largely due to the very successful mitigation of sulphur dioxide emissions from combustion processes, mean that the main result has been reduced exports of emissions to mainland Europe and decreased risk of acidification. Decreases in nitrogen deposition in the UK are mainly due to mitigation of emissions of nitrogen oxides both in the UK and Europe. Currently, critical loads for nitrogen (habitat-specific damage thresholds for atmospheric nitrogen deposition) are exceeded in 35% of habitats sensitive to eutrophication and 76% of Special Areas of Conservation in Scotland⁸³.

131. The Nitrogen Futures project, which was published in autumn 2020 by the Joint Nature Conservation Committee (JNCC) in partnership with the UK administrations and conservation agencies⁸⁴, is bringing together available data on nitrogen emissions and estimating the environmental benefits of different possible policy options and ambition levels to reduce pollution. As part of this project, the research consortium tested possible local measures to reduce and mitigate nitrogen pollution, in the context of a 2030/2040+ time scale, for example:

- Predict future atmospheric nitrogen emissions, concentrations, deposition and environmental impacts from the implementation of the NAPCP, including reduction in emissions from power generation and industry, and the use of catalytic reduction technology;
- Introducing low emission 'buffer zones' for agricultural emissions around protected nature conservation sites;
- Planting trees to recapture airborne nitrogen; and
- Initiatives to target pollution from transport and combustion sources.

Actions

We will:

- Ensure that the national nitrogen balance sheet for Scotland, to be established by March 2022, reflects the contributions to air pollution from all sectors of the economy. Also, ensure that the new evidence base from the balance sheet is used to inform future policy making around air quality.
- Use available data and other information to set a Scottish contribution for overall UK ammonia emissions reduction targets required under the National Emission Ceilings Directive.
- Support investigation into the method of assessing risk of significant harmful ecological effects from nitrogen deposition, comparing critical loads with dose-response or other options.

⁸³ https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1908280952_Trends_Report_2019.pdf

⁸⁴ <https://jncc.gov.uk/our-work/nitrogen-futures/>

- Assess the potential costs of implementing identified improvements to the current site condition monitoring of designated conservation sites, to improve on current methods which don't detect air pollution effects.
- Review current monitoring of terrestrial ecosystems (and air pollution effects) in Scotland.

Question on nitrogen deposition and environmental impacts

16. Do you agree with the package of actions put forward in the nitrogen deposition and environmental impacts section?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

8. Transport

132. The overarching objectives of the Scottish Government's transport policy are:

A Scotland that is connected by a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors. A sustainable travel hierarchy that promotes both a reduction in the need to travel, a modal shift to minimise transport emissions and effectively manage demand to reduce the number of road-based vehicle movements.

National Transport Strategy

133. The National Transport Strategy (NTS2)⁸⁵ sets out an ambitious and compelling vision for Scotland's transport system for the next 20 years to protect our climate and improve lives. The transport sector's role in improving air quality is captured within the NTS2 'Take Climate Action' priority, given that 'our current transport system is a significant contributor to poor air quality'. The NTS2 'Reduces Inequalities' priority is also relevant in that everyone in Scotland will share in the benefits of a modern and accessible transport system that provides fair access, is easy to use and is affordable; these are vital if modal shift (and thus emissions reduction) is to be realised via the Sustainable Travel Hierarchy. The NTS2 states that: 'we will design our transport system so that walking, cycling and public and shared transport take precedence ahead of private car use', utilising the Sustainable Travel Hierarchy and the Sustainable Investment Hierarchy.

134. In applying a sustainable travel hierarchy, we must:

- manage demand and decrease absolute traffic levels by reducing vehicle journeys (particularly single occupancy private cars), rather than simply switching from the internal combustion engines (ICE) to ultra low or zero emission vehicles, as these do nothing to ease congestion;
- reduce the need to travel, particularly drawing lessons from the COVID-19 emergency around flexible/home working;
- enable a modal shift from private cars to mass transit at a faster pace than occurred in the 2010s;
- reduce exhaust and non-exhaust emissions from all vehicles; and
- ensure that technological and engineering solutions will make a difference in the real world.

135. The Sustainable Investment Hierarchy is embedded within the Strategic Transport Projects Review⁸⁶ which emphasises a reduction in the need to travel unsustainably, making the most of our existing transport strategic system and supporting strategic investments in sustainable, smart and cleaner transport options, in accordance with Just Transition principles⁸⁷.

⁸⁵ <https://www.transport.gov.scot/our-approach/national-transport-strategy/>

⁸⁶ <https://www.transport.gov.scot/publication/initial-appraisal-case-for-change-national-strp2/>

⁸⁷ <https://www.gov.scot/groups/just-transition-commission/>

Low Emission Zones

136. Part 2 of the Transport (Scotland) Act 2019 confers new powers on local authorities in relation to the creation, and civil enforcement, of Low Emission Zones (LEZs). This supports the Scottish Government's commitment to LEZs⁸⁸ into Glasgow, Edinburgh, Dundee and Aberdeen. LEZs set an environmental limit on certain road spaces and restrict entry to the most polluting vehicles with the aim of improving air quality in Scotland's city centres. Vehicles that do not meet the emission standards set for a LEZ will not be able to drive within the zone and a penalty charge will be payable by the vehicle's registered keeper, unless the vehicle is either out of scope of the LEZ or is exempt.

Actions

We will:

- Introduce LEZs into Scotland's four largest cities.
- Provide financial support to businesses and individuals most affected by the implementation of LEZs through schemes such as the LEZ Support Fund⁸⁹ and Scottish Bus Emissions Abatement Retrofit (BEAR) Fund⁹⁰.

Avoiding travel

137. The greenest mile is the mile not travelled. There is a role for employers to minimise emissions from staff commuting by promoting flexible, mobile and adaptive working (e.g. homeworking, flexible office spaces). Transport Scotland has commissioned new research to build the evidence base on employers' attitudes towards working from home and their intended approach to employee travel as we exit from lockdown. This will help inform our thinking on how to support employers to encourage sustained home working as businesses recover from the pandemic. The Fair Work Framework⁹¹ and Acas homeworking guidance offers tangible advice on how to incorporate homeworking into corporate carbon management planning⁹².

Actions

We will:

- Encourage all Scottish employers to apply the Acas homeworking principles (where practically possible) within their Carbon Management Plans.
- Ensure that public bodies will be exemplars in adopting this way of working, and should incorporate travel from employee commute as part of their corporate carbon footprint and will report these emissions via their public bodies duties reporting.

⁸⁸ <https://www.lowemissionzones.scot/>

⁸⁹ <https://www.lowemissionzones.scot/support-fund>

⁹⁰ <https://www.transport.gov.scot/public-transport/buses/scottish-bus-emission-abatement-retrofit-fund/>

⁹¹ <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2018/07/fair-work-practices-in-procurement-toolkit/documents/information-sheets/> and <https://archive.acas.org.uk/index.aspx?articleid=4853>

⁹² <https://www.zerowastescotland.org.uk/save-energy-reduce-waste/carbon-management-plans>

Active travel

138. The Active Travel Framework⁹³ 2019 sets out the key policies for improving the uptake of walking and cycling in Scotland. It builds on the Active Travel Vision that by 2030 Scotland's communities are shaped around people, with walking or cycling the most popular choice for shorter everyday journeys. The NTS2 states that Scotland's transport system will be designed with sufficient walking and cycling options. As well as the clear benefits for air quality and climate change, this shift to active modes will also have major benefits for improving health through greater levels of physical activity.

139. The National Walking Strategy (NWS)⁹⁴ and the Cycling Action Plan for Scotland (CAPS)⁹⁵ set out clear ambitions for increasing the proportion of short journeys completed by walking or cycling. The Scottish Government has invested significant resources in improving walking and cycling infrastructure. In 2018 it doubled the funding for active travel from £40 million to £80 million, and has increased this to over £500 million in 2020-21. This funding supports various active travel schemes such as Places for Everyone⁹⁶ and Smarter Places, Smarter Choices⁹⁷. In 2020, we delivered the 'Spaces for People' fund in response to the Covid-19 emergency, providing over £38 million of funding and guidance to local authorities to quickly design and deliver the temporary walking and cycling infrastructure that was needed to allow people to physically distance.

Actions

We will:

- Provide funding for permanent cycling and walking infrastructure and behavioural change programmes, in line with the NTS Sustainable Travel Hierarchy and the Sustainable Investment Hierarchy.
- Work with local authorities and delivery partners to consider opportunities for making the temporary infrastructure permanent through the Places for Everyone programme.
- Consider the impact of match funding criteria on the uptake of active travel funding for infrastructure and behavioural change programmes.
- Work collaboratively with partners to deliver our Active Travel vision of enabling walking, cycling and wheeling to be the most popular mode of travel for short, everyday journeys in our towns and cities.

Bus

140. Bus services are arguably the single most important mode for reducing transport related air pollution due to their central role in reducing congestion, improving journey time reliability, and as a key component of future Mobility as a Service (MaaS) solutions.

⁹³ <https://www.transport.gov.scot/active-travel/active-travel-framework/>

⁹⁴ <https://www.pathsforall.org.uk/mediaLibrary/other/english/81342.pdf>

⁹⁵ <https://www.transport.gov.scot/publication/cycling-action-plan-for-scotland-2017-2020/>

⁹⁶ <https://www.sustrans.org.uk/our-blog/projects/2019/scotland/places-for-everyone/>

⁹⁷ <https://www.pathsforall.org.uk/active-travel/smarter-choices-smarter-places-1>

141. 75% of all public transport trips are taken by bus⁹⁸ but bus patronage has been dropping over a number of years and this must be reversed; bus must be positioned as one of the key tools in addressing air pollution from transport. Given that a single bus can take up to 75 private cars off our roads, the case for investment in bus priority infrastructure is strong. In 2019, the Scottish Government committed to investing over £500 million in such infrastructure - via the Bus Partnership Fund - to support local authorities, whilst also rolling out infrastructure for the trunk road network to prioritise high occupancy vehicles.

142. The Scottish Government also provides substantial financial support via the Bus Service Operators Grant⁹⁹ and concessionary fares, which now incorporates additional incentives for bus operators to adopt low emission vehicles. Procurement of next generation buses could be realised through a range of mechanisms including grant funding to operators to purchase zero emission buses using the rapid Scottish Ultra-Low Emission Bus Scheme funding model. The Scottish Bus Emissions Abatement Retrofit¹⁰⁰ programme also provides funding to licensed bus and coach operators, local authorities and community transport operators to retrofit existing mid-life buses to the Euro VI diesel standard (and thus make them LEZ-compliant).

143. A new bus service improvement partnership model underpinned by the Transport (Scotland) Act 2019 may help support the leveraging of measures that support air quality improvements, via conditions associated with vehicles and services.

Actions

We will:

- Manage the Bus Partnership Fund to support local authorities to establish bus priority infrastructure and adapt the trunk road network to prioritise high occupancy vehicles.
- Support fleet renewal toward the purchase of new ultra-low and zero emission buses in tandem with preparing/retrofitting the applicable existing mid-life bus and coach fleet for LEZ compliance.

Taxi and private hire

144. The taxi and private hire licensing regime is set within the Civic Government (Scotland) Act 1982, with supporting non-statutory best practice guidance from 2012¹⁰¹. The setting of taxi and private licensing conditions - including the setting of vehicle age limits and/or emission standards - in tandem with the collation and hosting of data is the responsibility of local authority licencing teams.

145. Compliance with LEZ emission standards is seeing taxi operators either upgrade to a zero emission taxi (supported by a Scottish Government interest free loan) or retrofit existing Euro 4 or 5 diesel taxis with new engines that are dual fuel

⁹⁸ Scottish Transport Statistics 2018, chapter 11 headlines

⁹⁹ <https://www.transport.gov.scot/public-transport/buses/bus-services-operators-grant/>

¹⁰⁰ <https://www.transport.gov.scot/public-transport/buses/scottish-bus-emission-abatement-retrofit-fund/>

¹⁰¹ <https://www2.gov.scot/Publications/2012/04/3534>

and run predominantly on Liquefied Petroleum Gas to the Euro 6 standard (with help available from the Scottish Government LEZ Support Fund).

Actions

We will:

- Update the Scottish Government 'Taxi and Private Hire Car Licensing: Best Practice for Licensing Authorities (2012)' guidance with a focus on environmental considerations and air pollution mitigation, including the role of emission abatement retrofitting.
- Ensure that taxi operations are incorporated into the drafting of 'LEZ Guidance', with cross reference to the 'Taxi and Private Hire Car Licensing' guidance.
- Explore the merits of a national taxi and private hire licencing database in terms of supporting the LEZ enforcement regime.

Rail

146. The Rail Safety and Standards Board Air Quality Strategic Framework 2020¹⁰² vision for the rail industry is: 'a rail network with a minimal impact on local air quality.' Collectively, the RSSB, train operating companies and Network Rail can improve air quality by actions that encompass modelling, retrofitting, idling, monitoring and collaboration. There is a natural fit between CAFS 2 and the RSSB framework to support delivery of tangible emission reduction from the rail industry in Scotland.

147. Localised problematic concentrations of air pollutants in large stations has seen Network Rail taken action to prevent unauthorised vehicles accessing the interior of prominent Scottish stations such as Glasgow Central and Edinburgh Waverley. The RSSB recommendations around monitoring and mitigation offer a natural starting point to reduce air pollution in large stations.

148. In July 2020 the Rail Decarbonisation Action Plan was published which sets out the plan to deliver against the Programme for Government commitment to decarbonise domestic passenger services in Scotland by 2035. This will be mainly delivered through a rolling programme of electrification, however, there will be some individual routes where the objective will be delivered through the use of alternative traction technology (hydrogen or battery). The resultant removal of diesel passenger services will minimise air pollution from trains.

149. There has also been investment in active travel provision through increased train and station cycle spaces, helping further encourage modal shift out-with the rail portion of journeys, in tandem with the rollout of integrated ticketing¹⁰³.

¹⁰² <https://www.rssb.co.uk/en/Research-and-Technology/Sustainability/Air-quality>

¹⁰³ <https://smartravel.scot/>

Actions

We will:

- Ensure that the RSSB Air Quality Strategic Framework recommendations are supported and delivered where practicable in Scotland.

Low carbon economy

150. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 must act as a catalyst to link climate change and air quality policies wherever practicable, particularly given the suite of annual and interim emission reduction targets for the economy sector.

151. Significant progress has already been made in Scotland on zero emission vehicles. The Scottish Government has committed to expand the already comprehensive Charge Place Scotland network of over 1250 public electric vehicle chargers across all parts of the country until 2022. This core network complements the growing provision of public charging provided by the private sector and builds increased consumer confidence in using electric vehicles.

152. The Scottish Government is working closely with public bodies and local authorities to improve low carbon infrastructure, promote behavioural change, and increase public access to low carbon technologies. Examples include:

- The Switched on Towns and Cities programme¹⁰⁴ enables local authorities to deliver infrastructure that supports EV uptake, with the aim to create at least 20 electric towns and cities across Scotland by 2025 to facilitate a step change in the uptake of plug-in electric vehicles.
- The Low Carbon Travel and Transport Challenge Fund supports public and third sectors to deliver low carbon transport and active travel hubs.
- The Switched on Fleets initiative supports local authorities and public bodies' transition of their vehicle fleets to zero emission alternatives, this includes electric and Hydrogen Fuel Cell vehicles.
- Supporting households in the transition to zero emission transport through interest-free Electric Vehicle Loan in tandem with funding towards the cost of installing domestic charge points for electric vehicles.

Actions

We will:

- Deliver strategic expansion of the ChargePlace Scotland network.
- Work across the public sector to accelerate the decarbonisation of vehicle fleets.
- Support a step change in the uptake of zero emission vehicles by supporting 20 Switched on Towns and projects by 2025¹⁰⁵.

¹⁰⁴ Switched on Towns and Cities Challenge Fund, <https://www.transport.gov.scot/our-approach/environment/carbon-reduction-on-roads/switched-on-towns-and-cities-challenge-fund/>

¹⁰⁵ <https://www.gov.scot/publications/delivering-today-investing-tomorrow-governments-programme-scotland-2018-19/>

Biofuels

153. The use of Biofuels as a transport fuel can help to achieve objectives on air quality and greenhouse gases. Fuels such as Biomethane, BioLPG, Biobutanol, Bioethanol and others are commonly used in transport fleets outside of Scotland. These fuels represent an alternative to diesel, and burn inherently cleaner, producing significantly less NOx and particulates at the tailpipe. Biofuels can be attractive to operators of commercial vehicles and can be more cost effective to run.

154. Second and Third generation biofuels in particular are able to reduce well-to-wheel CO₂ emissions by up to 80% and can utilise by-products from waste agricultural and waste food stocks of which Scotland is well placed to capitalise. This will also improve self-sufficiency of fuel supply to Scotland.

Actions

We will:

- Support the adoption of alternatively fuelled vehicles where these achieve the objectives of reduced emissions of air pollutants and greenhouse gases.
- Enable dedicated infrastructure through collaboration with the biofuel supply chain to increase the availability of biofuel filling stations for the transport sector.

Freight

155. The movement of goods and services around Scotland is a vital component of the economy. Use of heavy goods vehicles to do this may still be the most appropriate mode in certain circumstances, particularly over longer distances, and should not be prevented in the right setting. A mix of spatial planning and logistic technology – in tandem with the emergence of zero or ultra low emission powertrains as market-ready affordable solutions - could help to optimise emissions from the heaviest vehicles in our fleet in the years to come.

156. The Scottish Parliament Environment, Climate Change & Land Reform Committee's Air Quality Inquiry in 2018¹⁰⁶ recognised the need to identify opportunities for maximising the efficiency of urban freight movements. One option could be the potential application of consolidation centres under the Local Government (Scotland) Act 1973 and the Local Government in Scotland Act 2003 that local authorities could use to create distribution hubs, at their discretion. Opportunities for distribution or consolidation hubs must be identified at a local level and must be industry-led in order for them to be commercially viable.

¹⁰⁶ <https://www.parliament.scot/parliamentarybusiness/CurrentCommittees/105527.aspx>

157. The public and private sectors must collaborate to identify effective pragmatic solutions that centre around the affordability of, and access to, zero and ultra low emission vehicles. This approach will help to decarbonise the freight fleet and improve air quality at the same time. We must also acknowledge that some freight operators may be tied into lease agreements that do not enable easy, quick alteration of their fleet profile within the timescales set by Government to mitigate air pollution.

158. Zero emission light commercial vehicles, including e-cargo bikes, are emerging into the market and may offer more efficient and less harmful options for moving goods locally. Transition to such light commercial vehicles will be dependent on availability, lead-in times and cost/affordability (which links into the support element noted above). For e-cargo bikes, there is a natural alignment with the design and construction of active travel infrastructure. Important points to consider are engagement with industry and academia to examine options around, and barriers to, last mile and first mile deliveries, the potential impact of multiple smaller vehicles transporting goods on congestion; and the experiences of freight providers and retailers in coping with the surge in home deliveries during the COVID-19 emergency.

Actions

We will:

- Collaborate and engage with the freight industry and retailers to explore the options for, and the associated logistics of, 'last/first mile' delivery approaches.
- Collaborate with the private sector to identify effective pragmatic solutions on the uptake of zero and ultra low emission vehicles.

Trunk road network and demand management

159. The NTS2 clearly states that 'we will not build infrastructure to cater for forecast unconstrained increases in traffic volumes' and acknowledges that not managing demand for car use is no longer an option. This means that capacity expansion of the trunk road and motorway networks will be de-prioritised over the next 20 years. Instead, the Scottish Government will focus on schemes encompassing safety, maintenance and network optimisation. The NTS2 also states that managing demand will include better public transport and more and improved active travel options, alongside a role to encourage people not to make unnecessary journeys.

Actions

We will:

- Work to revoke all Air Quality Management Areas, by meeting the required air quality objectives, where trunk roads are the primary contributor to air pollutants.
- Ensure that all trunk and local roads will comply with European air quality targets.
- Explore how we can reallocate road space to cycling and pedestrians following learning from COVID-19 pop-up schemes.

Intelligent Transport Systems

160. Intelligent Transport Systems (ITS) describe technology and communications used to improve efficiency and safety for transport users¹⁰⁷ and also encompass the growing field of connected and autonomous vehicles (CAVs). Transport Scotland's 'Future ITS Strategy' sets out our vision for the continued and evolving use of ITS solutions to support a safe and efficient trunk road network, with a specific focus on making traffic management decisions based on expected, modelled or measured pollution levels. Transport Scotland's 'A CAV Roadmap for Scotland' sets out a vision for how Scotland can be at the forefront of developments in the connected & autonomous vehicle industry and to put sustainable transport at the heart of decision making and ensure that transport plays a key role in delivering net zero emissions by 2045.

161. In relation to air quality, ITS solutions could:

- ease congestion and smooth traffic flow;
- support low cost sensor deployment across a range of topics including local air pollution monitoring;
- support the design of traffic management technology deployment at potential pollution hotspots (including signalling; algorithms/strategies particularly at junctions with start:stop traffic flows);
- enabling localised pollution communication messaging to advise vehicle drivers around how their driving behaviours contribute to localised pollution;
- make active travel routes as attractive as possible by prioritising urban cycling corridors through harmonised traffic junction light settings;
- underpin the delivery of the LEZ back-office enforcement regime; and
- form a cornerstone in supporting the reallocation of road space and modal shift to public transport or active travel.

Workplace parking charges

162. Part 7 of the Transport (Scotland) Act 2019 focuses on a Workplace Parking Levy (WPL), providing local authorities with discretionary powers to implement a WPL scheme. WPLs can help to reduce congestion¹⁰⁸ and tackle climate/air emissions by influencing travel behaviour in a way that disincentivises private car use and encourages use of public and sustainable transport. However, it is a matter for employers on whether WPL scheme costs are passed onto employees.

163. For the purposes of improving air quality, local authorities that implement WPLs (and in doing so control the scheme design to determine geographical boundaries that might include, but should not be limited to, LEZs) should invest any proceeds from WPLs into more sustainable modes, to facilitate their local transport strategy.

¹⁰⁷ <https://www.transport.gov.scot/media/40406/its-strategy-2017-final.pdf>

¹⁰⁸ The SPICe report observed that 'Independent academic research into the impact of the Nottingham WPL on traffic congestion concluded that there is "... a statistically validated link between the introduction of a WPL and a reduction in congestion'. <https://spice-spotlight.scot/2019/05/10/the-proposed-workplace-parking-levy/>

Actions

We will:

- Take forward a policy consultation in advance of drafting WPL regulations, and thereafter, take forward the regulations required to support the WPL provisions in the Transport (Scotland) Act 2019 which require commencement and supporting regulations.

Vehicle scrappage schemes

164. Vehicle replacement programmes worldwide have historically applied a scrappage scheme to incentivise the registered keeper to trade in a used car/van for a new (ultra-low or zero emission) car/van. The Scottish Government introduced the LEZ Support Fund in 2019 as a form of vehicle replacement programme to help those who will have the most difficulty in making the transition to the introduction of a LEZ. Rather than a conventional scrappage scheme, it provides targeted mobility grant funding for households (who currently use a LEZ-non-compliant private car) and micro-businesses using non-compliant light commercial vehicles. This approach seeks to encourage lower emission mobility options such as, but not limited to, e-bikes, bikes, public transport season ticket contributions and other incentives which reduce car ownership.

Actions

We will:

- Deliver a vehicle replacement programme in Scotland that is founded on the principle of emissions reduction.

Vehicle speed and air pollution

165. Speed impacts on emissions are influenced by a range of factors including driver behaviour, congestion, fuel type and engine technology including after-treatment devices. Emissions tend to plateau between 40 and 60mph compared to much lower or higher speeds.

166. What is most important in terms of vehicle speed and emissions is the promotion of a smooth driving style that would see lower incidences of acceleration, deceleration, gear changing and braking in tandem with a reduction in 'stop-go' driving.

Measures requiring further investigation and research

167. Not all transport policies are devolved. However, there are opportunities for the UK administrations to collaborate including understand how fiscal instruments such as fuel duty and vehicle excise duty could be altered to incorporate the costs to society from air pollution caused by transport. This might include examining how a charging/payment regime alternative to the existing fuel and road taxation based

structure¹⁰⁹. How transport scheme design and operation can support COVID-19 recovery plans is also important.

Question on Transport

17. Do you agree with the actions put forward in the transport chapter?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

¹⁰⁹ https://infrastructurecommission.scot/storage/245/FullReport_200120.pdf

9. Governance, Accountability and Delivery

168. Within both central and local government, air quality is a cross-cutting issue which has intricate connections with many other policy areas. It follows that, to deliver continued and sustained reductions in air pollution, there must be effective and consistent coordination across these policy areas. Although much progress has been made in this respect over recent years, the CAFS review made it clear that there is still more to do.

169. At central government level, the NTS2, NPF 4 and the updated Climate Change Plan will provide a clear, well defined focus for building on achievements to date. In addition, the new national nitrogen balance sheet (see para 19) will quantify nitrogen use efficiency and losses across all sectors of the economy and environment. At local level, positive developments could also be achieved through consideration of how to ensure better recognition and integration of air quality across the various disciplines to more effectively and efficiently deliver air pollution reductions and associated benefits.

170. Specific issues for consideration at local level include the extent to which local authorities have air quality policies within their development plans and/or guidance documents, how many City Deals have air quality objectives and initiatives and how widespread and effective joint authority working at the regional level is. This could result in shared learning for how local government engages, delivers, measures progress and gains credit for delivering change on air pollution.

Local Air Quality Management

171. The Local Air Quality Management (LAQM) system is the main focus for air quality action at the local and regional level. Under LAQM local authorities are legally obliged to assess air quality in their area, designate Air Quality Management Areas (AQMAs) where objectives are not being met, develop air quality action plans for dealing with the issues identified in AQMAs and report regularly on progress towards achieving compliance with the objectives.

172. The LAQM system has been reviewed periodically since its establishment across the UK in 1997, most recently in 2016 with the publication of revised policy and technical guidance and the introduction of a more streamlined approach to annual reporting. Although the monitoring and reporting aspects of LAQM continue to work effectively, with a large, comprehensive body of air quality data available covering Scotland over a number of years, the CAFS review suggested that air quality objectives could be made to apply in all places with public access (as is the case for EU air quality standards) as opposed to the current approach which restricts application to places where members of the public have regular access. This could potentially increase the level of human health and future land use protection delivered by LAQM and also simplify the communication of air quality issues.

173. Currently, there is an inconsistency in the level of protection from air pollution afforded to people depending on their location. Much greater weight is given to residential settings as opposed to other settings with public exposure with, generally speaking, higher thresholds set for the latter. There is also a disconnect between

environmental health and health and safety legislation. Taken together, these two disparities mean that individuals are often subject to air quality in the workplace, or when shopping or partaking in leisure activities, that would not be permitted in a domestic context. In many ways this is a legacy of estimating exposure based on the fixed monitoring network and modelled estimates, due to the difficulties of taking into account people's mobility. As the body of data on mobility continues to grow, and the technology to make use of these data continues to develop, we need to consider how we can better match policy and guidance to the ways in which individuals actually move about in and interact with a variety of spaces.

174. In addition, the review highlighted some ways in which action planning could be made to work more effectively. At present, there is no standardised format for action plans in the way there is for annual reports. There is also no systematic approach to reporting on progress with implementing action plan measures or reviewing overall plans, nor for setting and agreeing target dates and timelines. Local authorities are not legally required to achieve the air quality objectives but simply demonstrate they are doing all that is reasonably possible to work towards them, mainly because some sources of air pollution are outwith direct local control such as SEPA controlled processes and trunk roads managed by Transport Scotland. This means that any obligation to complete action plan measures to specific timescales will need to be delivered through guidance rather than legislation.

Actions

We will:

- Assess the advantages and disadvantages of extending LAQM assessment to all areas with public access, to provide the necessary evidence base on which to make a decision on whether this would deliver overall benefits.
- Undertake a further revision of the LAQM policy guidance to take account of developments since the last update in 2016.
- Develop a more systematic approach to action plan production and implementation, including a standardised format and a methodology for agreeing and setting defined timescales for completing individual measures, revoking AQMAs and reporting progress.

Question on Local Air Quality Management:

18. Do you agree with the package of actions put forward in the Local Air Quality Management chapter?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

Governance

175. There was no formal role for the Scottish Ministers in the governance structure for CAFS, a gap highlighted by the independent review. The Ministerial Leadership Group, which was established to oversee Low Emission Zone delivery in Scotland's four biggest cities, has proved to be effective in ensuring that high level accountability is in place, with a clear link to delivery bodies. An air quality Ministerial Group will be led by the Cabinet Secretaries for the Environment, Climate Change & Land Reform and Transport, Infrastructure & Connectivity. Additional membership will comprise Ministers from other portfolios for consideration of specific issues (e.g. health, planning, agriculture), senior central and local government representatives, government agencies and external advisors. This would provide for greater partnership working between central and local government and across the relevant portfolios. The Ministerial Group will meet at least once a year and will be serviced by a secretariat to bring and take advice and action reports, as well as escalate action delivery and performance issues.

176. Transparency and public accountability are essential. Visible authority and leadership at Ministerial level is a key component of this, as is an implementation structure within which it is clear who is responsible for what and the steps that can and will be taken to drive delivery. The Governance Group which oversaw CAFS will be renamed the CAFS 2 Delivery Group. The Delivery Group will be chaired by the Scottish Government, and the membership will reflect the scope and priorities of the new strategy. The Group will be directly accountable to the Ministerial Group and will be provided with a clear remit, including the authority and defined procedures to ensure that the actions in the new strategy are effectively delivered, and a description of how its advice is conveyed to the Scottish Ministers. The Delivery Group will also need clear targets and KPIs.

177. The Delivery Group will in turn be supported by specialist subgroups which will meet on an ad hoc basis. The subgroups will provide advice and recommendations on delivery of CAFS 2 actions and provide any other input to the Delivery Group which that group requires or otherwise deems appropriate. The topics covered by the subgroups are likely to be wide ranging, covering in particular climate change, agriculture, placemaking, human health, energy, transport and the natural environment.

178. In order to objectively judge the effectiveness of this delivery structure, a complementary reporting mechanism will be required. Building on the model of the annual progress reports produced for CAFS, there needs to be a simple line of sight from strategy to planning, through delivery and ownership of actions to ultimate accountability. All of this will be reflected in a revised and strengthened annual performance report which will be approved by Ministers and submitted to Parliament.

Actions

We will:

- Establish a Ministerial Group to provide high level leadership and direction for CAFS 2.
- Establish a Delivery Group with a clear remit and well defined responsibilities for ensuring that the actions in CAFS 2 are delivered.
- Establish a series of specialist groups to provide advice to and support the work of the Delivery Group.
- Produce an enhanced and strengthened annual performance report documenting progress in implementing CAFS 2.

Question on governance:

19. Do you agree with the proposed Governance of CAFS 2?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

10. Further Progress Review

179. Air pollution is a complex multi dimensional issue. Whilst good progress has been made, a lot remains to be done with, in some cases, potentially significant financial and societal implications. The costs of not taking further action will continue to impact us all, however, in terms of negative health impacts, congestion, public safety, loss of amenity, climate change and a failure to maximise the potential for better quality of life and ultimately improved economic performance. Such failure will only serve to further exacerbate health inequalities and overall risks to public health for much of the population, besides having wider implications for efforts to tackle the global climate emergency.

180. For these reasons it is important that, whilst focusing on delivery of CAFS 2 over the short to medium term, we must also have an eye to the bigger picture and identification of additional priorities in the coming decades. There are two elements to this; refinement and retargeting of actions and policies as new evidence on the health and environmental impacts of poor air quality comes to light, and continued alignment with other long term policies, notably the commitment to net zero greenhouse gas emissions by 2045. As with the original strategy, CAFS 2 will therefore have a five year life cycle.

Actions

We will:

- Initiate a review on progress with implementing CAFS 2 during 2024, with a view to having a further version of Scotland's air quality strategy in place by the end of 2025.

Question on progress review

20. Do you agree with the proposed review timeframe?

- A) Yes
- B) No
- C) Neither agree nor disagree

Additional comments in support of your answer

Equality Impact Questions Cross Referred to the EQIA

181. Ensuring that there are no negative equalities impacts from this strategy is a key part of the development. Presented alongside this consultation paper is a partial Equality Impact Assessment (EQIA). This document examines where possible equalities impacts could be and will help us ensure that any negative impacts will be avoided. A final EQIA will be prepared and presented following this consultation. We would welcome your feedback on the partial EQIA.

21. Are you aware of any additional equalities impacts of the proposals in this strategy?

22. Do you think introducing legislation to control the supply of the most polluting domestic fuels, as described in chapter 7 of this consultation, will have disproportionate impacts on remote/rural or island communities? Please provide evidence where possible in support of your answer.

23. Do you think this strategy will disproportionately impact low income households? Please provide evidence where possible in support of your answer.

Business and Regulatory Impact Assessment Questions Cross Referred to the BRIA

182. Assessing the impacts from this strategy on businesses is a key part of the development. Presented alongside this consultation paper is a partial Business and Regulatory Impact Assessment (BRIA). This section of the consultation paper is designed to examine where possible impacts could be and will help us finalise the BRIA, which will be prepared and presented following this consultation.

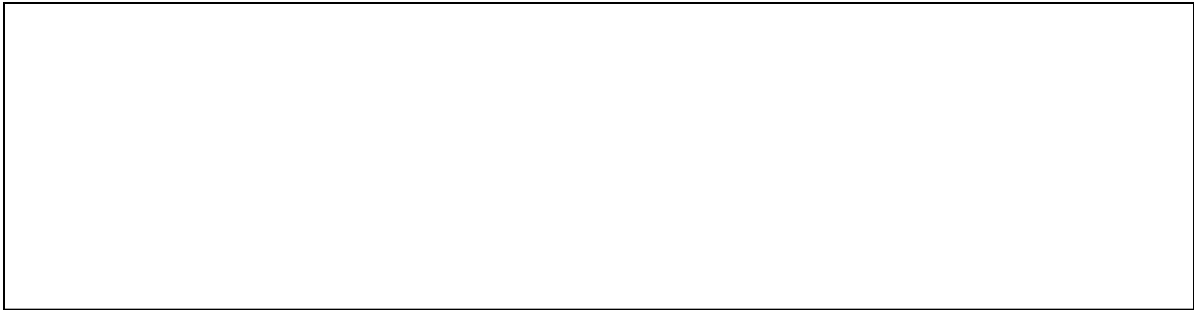
183. When answering these questions it should be noted that CAFS 2 is a high level strategy. Any regulations which follow on to support the proposals in CAFS 2, will be required to undergo further impact assessments.

Questions

24. Are you aware of any additional business or regulatory impacts of the proposals in this strategy? Please provide any supporting evidence that you are aware of.

25. Do you anticipate that the proposals in this strategy will have differing impacts for large/small scale businesses? Please provide any supporting evidence that you are aware of.

26. Would there be different impacts for those that operate in Scotland only and those that operate across different parts of the UK? Please provide any supporting evidence that you are aware of.



27. Would there be different impacts for those that operate in remote/rural or island communities? Please provide any supporting evidence that you are aware of.



Strategic Environmental Assessment Environmental Report Questions

Questions

28. What are your views on the accuracy and scope of information used to describe the environmental baseline set out in the Environmental Report?

29. What are your views on the predicted environmental effects as set out in the Environmental Report?

30. What are your views on the findings of the SEA and the proposals for mitigation and monitoring the environmental effects set out in the Environmental Report?



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