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**Environment, Climate Change and Land Reform
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Fearann**

Air Quality in Scotland Inquiry



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Environment, Climate Change and Land Reform Committee

To consider and report on matters falling within the responsibility of the Cabinet Secretary for Environment, Climate Change and Land Reform.



<http://www.scottish.parliament.uk/parliamentarybusiness/CurrentCommittees/environment-committee.aspx>



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Executive Summary

1. This section provides a full list of the Committee's recommendations.

Suitability of the Cleaner Air for Scotland strategy

The Committee is concerned about the direction of travel, rate of change and action on the ground and recommends that CAFS is kept under review to ensure that it remains fit for purpose given the continual changes that are being seen in this area. In order to best ensure that it meets its broader climate change targets, CAFS' contribution to meeting the Scottish Government's climate change, environment and health policies must be at the forefront of this change.

The Committee considers that, as highlighted in evidence, the Scottish Government's yearly progress report is insufficiently clear to allow an accurate assessment of progress against the 34 original actions laid out in CAFS. Therefore the Committee recommends that a more transparent progress report is provided in future updates to show the status of the delivery against each individual action. This should also incorporate and measure the impacts of any changes to relevant Government policy and budgets. It should also highlight the Government's progress towards EU compliance by 2020.

National vs local policy cohesion

The Committee recommends that the Cabinet Secretary for Environment, Climate Change and Land Reform, along with the Minister for Transport and Islands, continue their discussions with the Minister for Local Government and Housing to ensure the planning and placemaking ambitions set out in CAFS are fully realised. Otherwise the active travel and sustainable transport aspirations of the Scottish Government will not be met. Air quality must be a key component in the reviews of the national planning framework and national planning policy.

Behaviour change remains a significant challenge and the Committee would welcome further detail on how the Scottish Government plans to address this.

The Committee also recommends that the Cabinet Secretary and Minister consider what additional mechanisms are required to resolve any disconnect between national agencies and local authorities in delivering the CAFS objectives. The Committee would also welcome further information on funding to support local authorities to deliver the CAFS outcomes.

Low Emission Zones

The Committee recommends that the Scottish Government provides an update on the progress being made on the introduction of the four LEZs by the end of June 2018 along with an indication of the date of which they will be enforceable.

The Committee believes that for LEZs to best contribute to improvements in air quality in their respective areas, cars should be included. The Committee therefore recommends that the Scottish Government ask the relevant local authorities to include private vehicles in their LEZs.

Given the resources needed to implement LEZs, the Committee recommends that the Scottish Government, local authorities and all relevant public agencies work jointly to ensure that all available technology is shared to help ensure a consistent and efficient approach across the country.

The Committee further notes the view that congestion charging and workplace parking levies may also help to improve air quality and recommends that the Scottish Government explore these options following the introduction of the LEZs.

Cars

The Committee is clear that the harmful emissions from diesel cars is one of the major contributors to poor air quality. The Committee welcomes the Scottish Government's commitment to phase out both petrol and diesel cars and vans by 2032 but recommends that the Government provides a timeline for how it intends to reach this commitment including any legislative measures, non-legislative regulation and incentives to reach its target. The timeline should include milestones the Scottish Government aims to reach between now and 2032 to ensure that it is on schedule to meet the commitment.

The Committee also recommends that the Government provides details for what this will mean in practice for diesel car and van owners and its plans for ensuring that there is the necessary national and local infrastructure for alternative vehicles to facilitate this.

Buses

The Committee seeks detailed explanation of the delay in the roll out of the relevant public transport actions in the Cleaner Air for Scotland Strategy along with a revised timetable for delivery.

The Committee recognises that compliance with the proposed LEZs will come at a significant cost. It recognises the Scottish Government is already providing financial assistance in this regard. The overall cost is unclear. Therefore, the Committee seeks details from the Scottish Government of the best available estimates for these zones, broken down by both city and the private/public purse.

Freight transport

The Committee recognises the potential benefits to air quality in removing freight from the roads, particular during peak times in urban areas and recommends that the

Scottish Government provide an update on its plans for consolidation centres, moving freight from road to rail and night time deliveries.

Given the Scottish Government's plans to phase out both petrol and diesel cars and vans by 2032, the Committee asks the Scottish Government to set out detailed plans for assisting the road haulage industry in moving, over time, to alternative fuelled vehicles.

Active travel

The Committee considers that to meet both air quality and wider climate change targets, increasing the number of journeys by bike to 10% and beyond is necessary. The Committee recommends that the Scottish Government complete a full review of why the percentage of journeys only rose by 0.2% between 2010 and 2016 and sets out a detailed delivery plan to overcome the barriers to progress, including around placemaking and training. The Committee also asks the Scottish Government to provide a breakdown of its spend on safe infrastructure for active travel and what level of additional investment in such infrastructure may be required to meet the 10% target.

While highlighted in an earlier chapter of this report, the Committee considers that it is imperative that active travel is a key component of any update of planning regulations and guidance and recommends that the Scottish Government make this a similar priority so that suitable walking and cycling infrastructure is at the heart of all future developments. Furthermore, the Committee asks that the Scottish Government consider what further planning guidance is required to support local transport strategies and ensure a consistent approach across the country.

The Committee also recommends that the Scottish Government breaks down its active travel targets for urban and rural areas to show the expected rate of uptake in different parts of the country.

Monitoring air quality

The Committee recommends that the Scottish Government provide updated guidance on what types of non-automated air quality monitors can be used to provide sufficiently accurate data to compliment its automated equipment so that local authorities and national agencies can properly record and benchmark air quality much more widely than currently possible. This data should then be incorporated into the Scottish Government's air quality website.

The Committee recommends as a matter of urgency the Scottish Government review whether the current guidelines and regulations around the monitoring and tackling of Air Quality Management Areas is sufficiently robust to ensure that problems can be identified and rectified.

The Committee also considers the existing 95 automated monitoring stations to be a missed opportunity to raise awareness of air quality issues and encourage behaviour change. It calls on the Scottish Government to review how they might be publicised and

also potentially provide live data to highlight pollution levels. This is currently done with speed cameras showing simple 'happy' or 'sad' faces based on the speed of a motorist - why not with air pollution?

Finally, the Committee recommends that the Government review any school located close to an Air Quality Management Area and whether additional mitigation should be in place near the school building or grounds. In addition, the planning of any new school or the updating of any existing facility must have the mitigation against poor air quality and harmful climate change emissions at its heart.

Other causes of air pollution

Agriculture

The Committee recommends that the Scottish Government updates the Cleaner Air for Scotland Strategy to include agricultural pollutants and how, and to what scale, it expects these to be reduced in the coming years. The Committee also recommends that the Scottish Government provide guidance to the agricultural sector on how to adopt such new techniques as well as consider what incentives might be offered to help accelerate the use of new methods.

Wood burning

The Committee recommends that the Scottish Government undertake research to understand the extent of pollutants emanating from wood burning stoves and biomass boilers, which are regulated differently, so that informed decisions can be made on whether any harmful impact needs to be mitigated.

The Committee also recommends that the Scottish Government review the current regulations and guidance on the installation of wood burning and multi fuel stoves and boilers in homes to ensure that air pollution from wood burning and multi-fuel stoves is sufficiently considered and appropriately regulated.

Introduction

2. The Committee began its inquiry into air quality in Scotland following a meeting with a [range of stakeholders and academics in May 2017](#). In that evidence session the Committee considered the scale of the issue of air quality in Scotland and the robustness of Scottish plans to tackle this. The Committee heard from:
 - Professor David Newby, Edinburgh Clinical Research Facility, University of Edinburgh;
 - Fintan Hurley, Scientific Director, Institute of Occupational Medicine;
 - George Curley, Director of Operations and Facilities, NHS Lothian;
 - Dr Colin Ramsay, Consultant Epidemiologist, Health Protection Scotland;
 - Anna Heslop, Lawyer, Clean Air - Strategic Litigation, Client Earth;
 - Janice Milne, Head of National Regulatory Services, Scottish Environment Protection Agency;
 - Emilia Hanna, Air Pollution Campaigner, Friends of the Earth Scotland;
 - Vincent McNally, Environmental Health Officer, Sustainable Glasgow, Glasgow City Council;
 - Will Garrett, Spatial Policy Manager, Planning & Transport, The City of Edinburgh Council;
 - Tom Rye, Professor of Transport and Director of Transport Research Institute, Napier University;
 - Professor Bob Rees, Head of the Carbon Management Centre, Scotland's Rural College; and
 - Craig McLaren, Director of Scotland and Ireland, Royal Town Planning Institute.
3. The Committee agreed to focus the inquiry on the effectiveness of the Scottish Government's [Cleaner Air for Scotland Strategy](#) (CAFS) which was published in November 2015. The Strategy outlined 40 'key actions' with a vision for Scotland's air quality "to be the best in Europe."ⁱ
4. Since the strategy was launched, the EU has introduced a new directive to reduce air pollution and there has been a High Court judgement in relation to the adequacy of the UK response. In June 2017 the Scottish Government also published its [2016 Progress Report](#) on CAFS outlining what had been done in the 12 months since the Strategy's launch. The European Commission [also made a statement in January 2018](#), following an Air Quality Ministerial meeting, that the [UK and eight other EU countries](#) must comply with EU air pollution laws or face the European Court of Justice.

ⁱ Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#) .

5. The Committee also agreed to explore whether Scotland is doing all that it can to tackle toxic gases and how this fits into the overall plans to cut pollution within the UK and EU.

Call for evidence

6. The Committee's call for written evidence on the inquiry ran across July and August 2017. It asked for views on:
 - Whether Scotland has the right policies (Clean Air for Scotland Strategy), support and incentives in place to adequately tackle air pollution?
 - Are the policies sufficiently ambitious?
 - Are the policies and delivery mechanisms (support and incentives) being effectively implemented and successful in addressing the issues?
 - Are there conflicts in policies or barriers to successful delivery of the air quality objectives?
7. It also asked for specific views on:
 - How Scottish policy fits with the UK and EU policy on air quality?
 - Are the powers and resources of local authorities and the Scottish Environment Protection Agency (SEPA) to address air pollution adequate?
 - Is Scotland on target to have a pilot low emission zone (LEZ) in place by 2018 and should there be more than one LEZ pilot?
 - How should the improvement of air quality be prioritised in areas where there have been persistent breaches of NO₂ limit values?
 - Is adequate consideration given to air pollution from agriculture?
8. The Committee subsequently received [over 50 written submissions](#).

Scottish Government's Programme for Government 2017-18

9. In September 2017 the Scottish Government published its [Programme for Government for 2017-18](#) which outlined a number of actions in relation to air quality. These included:
 - creating a Low Emissions Zone (LEZ) in one city by the end of 2018;
 - working with local authorities to introduce LEZs into Scotland's four biggest cities by 2020, and into all Air Quality Management Areas, where the National Low Emission Framework (NLEF) appraisals advocate such mitigation, by 2023;

- establishing an Air Quality Fund to support local authorities with Air Quality Management Areas to deliver transport-based mitigation as identified by the NLEF;
 - working with the commercial and bus sectors, the Energy Saving Trust and the Low Carbon Vehicle Partnership to establish an Engine Retrofitting Centre in Scotland to support the delivery of LEZs; and
 - to phase out the need for petrol and diesel vehicles by 2032, underpinned by a range of actions to expand the charging network, support innovative approaches and encourage the public sector to lead the way.
10. The Committee subsequently [wrote to the Cabinet Secretary for Environment, Climate Change and Land Reform](#) to request more details on the Scottish Government's work in relation to the proposed LEZs. The [Cabinet Secretary responded](#) on 25 October 2017.

Related Parliamentary scrutiny

11. The Public Petitions Committee (PPC) continued its consideration of petition [PE1607](#) on congestion charging in major Scottish cities at its [meeting on 26 October 2017](#). While the PPC agreed to close the petition on the basis that the Scottish Government had indicated that it will seek to introduce LEZs in Scotland's four biggest cities, it agreed to make the Environment, Climate Change and Land Reform Committee aware of the petition in relation to its inquiry into air quality in Scotland.

Oral evidence sessions

12. The Committee held four evidence sessions on the inquiry. The first, on [Tuesday 31 October 2017](#), focused on the policy coherence required for making a step change in air quality in Scotland. The Committee heard from:
- Graham Applegate, Principal Policy Officer for Air Quality, Scottish Environment Protection Agency;
 - Craig McLaren, Director, Royal Town Planning Institute Scotland; and
 - Stephen Thomson, Head of Environment & Sustainability, Transport Scotland.
13. The second, on [Tuesday 7 November](#), concentrated on the transport challenges behind emissions and congestion on Scotland's roads. It heard from:
- Chris MacRae, Head of Policy, Freight Transport Association;
 - Phil Matthews, Chair, Transform Scotland;
 - Alex Quayle, Senior Policy Officer, Sustrans; and

- Paul White, Director of Government Relations, Confederation of Passenger Transport UK.
14. The third session looked at other potential causes of air pollution as well as providing a local authority perspective. The Committee heard, on [Tuesday 14 November](#), from:
- David Duffy, Junior Vice President, Royal Environmental Health Institute of Scotland;
 - Dr Scott Hamilton, Principal Air Quality Consultant, Ricardo Energy & Environment;
 - Vincent McNally, Environmental Health Officer, Sustainable Glasgow, Glasgow City Council;
 - Dennis Milligan, Head of Communications, Stove Industry Alliance; and
 - Professor Mark Sutton, Environmental Physicist, NERC Centre of Ecology & Hydrology.
15. The Committee concluded its evidence on [Tuesday 5 December 2017](#) by hearing from both Roseanna Cunningham MSP, Cabinet Secretary for Environment, Climate Change and Land Reform and Humza Yousaf MSP, Minister for Transport and Islands as well as accompanying Scottish Government officials. Hearing from two Scottish Government Ministers at the same time is unusual. However, as much of the inquiry dealt with transport emissions, the Committee considered that it was necessary to hear from the relevant Ministers.

Committee visit to an Air Quality Management Zone

16. Following a [written submission from Corstorphine Community Council](#), the Committee agreed to visit [St John's Road in Corstorphine](#), an area to the West of Edinburgh. St John's road is an active [Air Quality Management Zone](#) and has been described as having the [worst air quality in Scotland](#).
17. During the visit on 24 October 2017, the Committee met with local residents and school children as well as members of the Community Council and City of Edinburgh Council officials. The Committee was able to see the traffic congestion and topography of the area as well as hear about the impact of poor air quality in the local area.

Acknowledgements

18. The Committee is extremely grateful for all those who participated in the inquiry, whether making a written submission or appearing in front of the Committee. The Committee recognises that it is only because of the knowledge and willingness of all those who submit evidence that is able to have a full understanding of the issues and make informed and robust recommendations.

19. The Committee is very thankful to Corstorphine Community Council and all those it met on the visit for their openness and insight. It also appreciates the helpful input from the Greater London Authority and Transport for London.

Membership changes

20. The membership of the Committee changed during the course of the Committee's inquiry. The Committee would like to record its thanks to:
- Alexander Burnett (to June 2017);
 - Maurice Golden (to June 2017);
 - Emma Harper (to November 2017); and
 - David Stewart (to January 2018).

Cleaner Air for Scotland Strategy

21. The [Cleaner Air for Scotland Strategy](#) (CAFS) sets out the Scottish Government's long term vision for air quality in Scotland. At its launch the then Minister for Environment, Climate Change and Land Reform, alongside the Minister for Transport and Islands, said that CAFS was a "national strategy within which we can all work together towards the common aim of achieving the best possible air quality for Scotland. We already enjoy an enviable reputation for our landscape and scenery, and we want our air quality to be viewed in the same way."ⁱⁱ
22. The organisations and bodies supporting the delivery of CAFS are:
- The Scottish Government
 - Transport Scotland
 - Scottish Environmental Protection Agency
 - Local authorities
 - Non-governmental organisations
 - Health bodies
 - Representatives from the Scottish transport sector
23. A chart provided in CAFS shows what the Scottish Government hopes to achieve over the first 5 years of the strategy:

ⁱⁱ Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

The Scottish Government's key actions of the first 5 years of CAFS

2015	2016	2017	2018	2019	2020
EU air quality targets not complied with	Action required				Full compliance with EU air quality legislation
32 local Air Quality Management Areas	Actions for change				Significant progress towards revocation of all Air Quality Management Areas
Establish new National Low Emission Framework (NLEF)	Complete NLEF Pre-Appraisal and begin Stage 1 Appraisal	Complete NLEF Stage 2 Appraisal	Prepare for NLEF scheme Implementation	Implement NLEF schemes	Manage and Monitor NLEF schemes
Air quality awareness campaigns for the general public, business and government					
Refocused Local Air Quality Management system					

Source: Scottish Government (2015) *Cleaner Air for Scotland: The Road to a Healthier Future*.

24. CAFS sets out six key areas where changes can lead to improvements:

- **Transport:** A Scotland that reduces transport emissions by supporting the uptake of low and zero emission fuels and technologies, promoting a modal shift away from the car, through active travel (walking and cycling) and reducing the need to travel.
- **Legislation and Policy:** A Scotland where all European and Scottish legal requirements relating to air quality are, as a minimum, complied with.
- **Communication:** A Scotland where all citizens are well informed, engaged, and empowered to improve our air quality.
- **Health:** A Scotland which protects its citizens from the harmful effects of air pollution, reducing health inequalities.
- **Placemaking:** A Scotland where air quality is not compromised by new or existing development and where places are designed to minimise air pollution and its effects.
- **Climate Change:** A Scotland that reduces greenhouse gas emissions and achieves its renewable energy targets whilst delivering co-benefits for air quality.ⁱⁱⁱ

25. Chapter 14 of CAFS outlines a list of 34 actions over the first 5 years of its operation. It includes who will deliver the action, when it is expected to be completed and whether funding is currently available or funding options are in development. A CAFS Governance Group, supported by specialist subgroups, has been established to oversee implementation of CAFS.
26. In relation to legislation and policy outlined in CAFS to ensure that "all European and Scottish legal requirements relating to air quality are as a minimum complied with" the Scottish Government will:
- Refocus the Local Air Quality Management system
 - Establish a PM_{2.5}^{iv} monitoring network
 - Produce revised and updated Scottish action plans to demonstrate how we will achieve compliance with the EU Ambient Air Quality Directive^v
27. A [yearly progress report](#) will be published to report on these actions.

Suitability of CAFS

28. The Committee received evidence which was generally supportive of CAFS high level commitments and aspirations. Craig McLaren Director of the Royal Town Planning Institute Scotland, said that his organisation has "a lot of faith" in CAFS. Mr McLaren highlighted, from a planning perspective, that changes take time to implement but in the medium to longer term, CAFS will be "more fruitful". He also believed that CAFS will act as a co-ordinator to bring various disciplines together.^{vi} Graham Applegate, Principal Policy Officer for Air Quality at the Scottish Environment Protection Agency said that CAFS was fit for purpose and would allow Scotland to comply with EU legislation by the 2020 deadline. Stephen Thomson, Head of Environment and Sustainability at Transport Scotland described CAFS as a "live document" because air quality issues are moving so quickly but as a strategy it is "on the right path."^{vii}

ⁱⁱⁱ Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

^{iv} Particulate matter (PM) is a term used to describe the mixture of solid particles and liquid droplets in the air. It can be either human-made or naturally occurring. Some examples include dust, ash and sea-spray. Particulate matter (including soot) is emitted during the combustion of solid and liquid fuels, such as for power generation, domestic heating and in vehicle engines. Particulate matter varies in size (i.e. the diameter or width of the particle). PM_{2.5} means the mass per cubic metre of air of particles with a size (diameter) generally less than 2.5 micrometres (µm). PM_{2.5} is also known as fine particulate matter (2.5 micrometres is one 400th of a millimetre). Source: [DEFRA](#).

^v Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

^{vi} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Cols 7-8.

^{vii} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Cols 6-7.

29. Nevertheless, others felt the strategy was either not being delivered or was not going far enough. Alex Quayle, Senior Policy Officer at Sustrans, believed that CAFS was a strong policy and was a move in the right direction, but he highlighted that the number of air quality management areas had risen from 34 to 38 over the past year, which suggested that the "direction of travel is not quite right."^{viii} Transform Scotland considered that while the strategy was "a start" it was not adequate or early enough to meet legal requirements. Others, including Spokes, the British Heart Foundation, Paths for All and Johnston Orr, were concerned that CAFS largely overlooks active travel and relies on others to effect change.^{ix}
30. In its written submission, Friends of the Earth Scotland did not believe that Scotland has the right policies, support and incentives in place to adequately tackle air pollution. While supportive of CAFS commitment to regulate fine particles (PM_{2.5}), it said it had a number of "policy failings", such as failing to "introduce enough concrete actions to reduce traffic volumes in large cities, or reduce vehicle emissions standards."^x Corstorphine Community Council said that they had seen "no meaningful reduction in the persistent air quality issues" and that the community must deal with "health impacts, shocking congestion, detriment to the local environment and economic impacts as the current mechanisms in place are woefully inadequate."^{xi} The British Heart Foundation, while supporting much of the strategy, highlighted the need to help the population understand the risks in their areas. It pointed to the Scottish Government's [Air Quality in Scotland website](#) and app which provides up-to-date air pollution forecasts across Scotland. While calling it a useful tool, the British Heart Foundation would like to see this system improved "to ensure advice reaches down to the community level and is easily accessible to the population as a whole."^{xii} Spokes Planning Group meanwhile highlighted that poor air quality was a public health emergency and CAFS does not adequately tackle this.
31. In its written submission, Transform Scotland gave its view on the progress of many of the 34 actions listed in CAFS. However, its Chair, Phil Matthews said that in the 2016 CAFS Progress Report "struggled to identify whether some actions had been completed" while for actions that were in progress, it "struggled to identify the end point of progress towards delivery."^{xiii}
32. The Cabinet Secretary for Environment, Climate Change and Land Reform, Roseanna Cunningham, said that CAFS is "under constant review" and expects it to be "completely refreshed" after 2020. Ms Cunningham added that a number of the 34 actions have either been delivered already or are being delivered. The Minister

^{viii} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 2.

^{ix} Written submissions [available here](#).

^x Friends of the Earth Scotland. Written Submission.

^{xi} Corstorphine Community Council. Written submission.

^{xii} British Heart Foundation. Written submission.

^{xiii} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 25.

for Transport and Islands, Humza Yousaf, added that as the four low emission zones are expected to be introduced by 2020, that will be "when we want to re-examine the strategy and consider whether a more wholesale update might be required." On the requirement for EU compliance by 2020, the Cabinet Secretary said that she had "as much confidence as I can have at this point that we will be able to achieve that."^{xiv}

Conclusions

33. The Committee acknowledges the evidence it received highlighted concerns over the suitability of CAFS to adequately tackle air pollution. This report will consider these concerns in more detail. The Committee also acknowledges some of the positive responses to the strategy.
34. The Committee is keen to ensure that the actions listed in CAFS can be adequately scrutinised. The annual progress report must therefore accurately reflect progress against these actions while also clearly highlighting changes to government policy.
35. The Committee is concerned about the direction of travel, rate of change and action on the ground and recommends that CAFS is kept under review to ensure that it remains fit for purpose given the continual changes that are being seen in this area. In order to best ensure that it meets its broader climate change targets, CAFS' contribution to meeting the Scottish Government's climate change, environment and health policies must be at the forefront of this change.
36. The Committee considers that, as highlighted in evidence, the Scottish Government's yearly progress report is insufficiently clear to allow an accurate assessment of progress against the 34 original actions laid out in CAFS. Therefore the Committee recommends that a more transparent progress report is provided in future updates to show the status of the delivery against each individual action. This should also incorporate and measure the impacts of any changes to relevant Government policy and budgets. It should also highlight the Government's progress towards EU compliance by 2020.

National vs local policy cohesion

37. Much of the evidence received by the Committee agreed that Scottish policy was adequately integrated into the UK and EU approach. The Royal College of Physicians noted that the Scottish Government's current strategy is "largely consistent with the World Health Organisation's recommendations which emphasise the need to create integrated solutions with practical alternatives that make low pollution travel choices the easier choices for everyone."^{xv} The concerns which were raised centred on understanding, integration and consistency across Scotland at both national and local authority levels.

^{xiv} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 3-4.

^{xv} The Royal College of Physicians. Written submission.

38. Graham Applegate of the Scottish Environmental Protection Agency (SEPA) said that one of the main aims of CAFS was to ensure consistency across Scotland and that local air quality management reports have recently been "streamlined to ensure that authorities all report in the same way, and that the data are presented in the same way." Mr Applegate said that it sees the reports from each local authority, so if there are inconsistencies SEPA can speak with the relevant council to suggest future changes. He added:
- ” Many of the solutions for air quality problems are common: there is nothing wild or wacky out there. People know the solutions and know where they need to be implemented. In most cases, local authorities are doing that.”^{xvi}
39. West Lothian Council however highlighted, in relation to transport, a "disconnect between policies directed towards local authorities and policies directed towards infrastructure which are the responsibility of Transport Scotland. Local authorities cannot compel other organisations to take actions. Local authority transport budgets do not routinely include elements reserved for stimulating and supporting sustainable travel.”^{xvii} When later questioned on this point, the Minister for Transport and Islands, Humza Yousaf, said that while there "will always be some tensions with local authorities on transport, between their desires and ambitions and our budgetary constraints and the processes within which we work. However, I am not aware of many tensions and contradictions.”^{xviii}
40. Aberdeen City Council said in its submission that “the legal status of the standards and objectives within the Scottish regulations and the EU statutory duties can be confusing to the public, businesses such as bus operators and road haulage companies and other stakeholders.”^{xix}
41. Others noted that there are challenges in bringing professions moving at different speeds together as well as maximising the resources available. Craig McLaren of the Royal Town Planning Institute Scotland (RTPIS) said "One of the things about CAFS that has been incredibly useful is that it has given us, as different professions in different organisations, something to gather around. I am not sure that we would have worked together so closely without CAFS or the work that was done in the lead up to it.”^{xx}
42. In relation to planning issues, Craig McLaren of the Royal Town Planning Institute Scotland (RTPIS) said that as planning is fully devolved to Scotland, there is a "clear hierarchy" at national, regional and local levels. Mr McLaren nevertheless added that air quality needs to be seen as a "key component" to the reviews of the national planning framework and national planning policy.^{xxi} The RTPIS also said in its written submission that "approaches that shape the built environment to minimise

^{xvi} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 14.

^{xvii} West Lothian Council. Written submission.

^{xviii} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Col 11.

^{xix} Aberdeen City Council. Written submission.

^{xx} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 9.

air pollution should be complemented by strategies, beyond the scope of planning, that target behaviour change."^{xxii}

43. Vincent McNally, Environmental Health Officer at Glasgow City Council, said his local authority will, if necessary, require a full air quality assessment to be considered as part of the overall planning process for a new development. He referenced new homes being built in the city centre that do not have any parking provision so as to discourage car use. Mr McNally believed that placemaking was a key component of CAFS and that decisions are being made in Glasgow to ensure that decisions are made to look at how the city is developed and that there is adequate provision for sustainable transport, public transport and electric charging points. He added that "air quality is higher up the planning agenda than it ever has been."^{xxiii}

44. Sustrans was nevertheless concerned about the lack of connectivity between new housing developments and local services and transport options. Alex Quayle, its Senior policy Officer, suggested that there should be an "infrastructure first" approach to planning to ensure that facilities as well as active transport or public transport options are in place before the new homes are occupied. Mr Quayle added:

” At present, it is unheard of for there to be a new housing development that people cannot drive their cars up to and move into, but that does not necessarily mean that there will be walking and cycling routes to schools, a shop and so on."^{xxiv}

45. When asked by the Committee whether any major housing allocation or transport development had been removed from a local development plan due to air quality concerns, Transport Scotland, SEPA and RTPIS indicated that they were not aware of any examples of this happening. Craig McLaren of RTPIS said that there was a role for relevant organisations to engage "at the start of the process so that we get the right policies that present the framework for assessing planning applications."^{xxv}

46. The Committee was interested to learn of the possibilities surrounding green infrastructure, such as 'living walls' and 'pop-up parks, to both mitigate against harmful pollutants and raise awareness of air quality. Craig McLaren said that while more work could be done, green infrastructure is beginning to be promoted by councils and taken into account by developers."^{xxvi}

^{xxi} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Cols 15-17.

^{xxii} Royal Town Planning Institute Scotland. Written submission.

^{xxiii} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 42.

^{xxiv} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 7.

^{xxv} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 18.

^{xxvi} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Cols 39-40.

47. The Cabinet Secretary for Environment, Climate Change and Land Reform, Roaseanna Cunningham, said that while she is not responsible for Scotland's planning system, she expected that considerations relating to air quality, environmental priorities and climate change should "be fully taken on board in planning decisions." Ms Cunningham added that her "particular concern is to ensure that when new housing developments are put in place, an understanding of transport issues is part and parcel of that." The Minister for Transport and Islands also said that there is cross-Governmental working on the planning review and that he is speaking closely to the Minister for Local Government and Housing on some of the transport measures. In particular, Mr Yousaf believed that there is "not enough consideration of transport matters in large developments, not only from an air quality perspective but from a traffic management perspective."^{xxvii}

Conclusions

48. The Committee considers that for national strategies to be fully implemented and their ambitions achieved, there needs to be alignment at all levels - from the Scottish Government and partner agencies to local authorities. The Committee is heartened by what it has heard about some of the co-operation at different levels of government as well as between different organisations and professions. It nevertheless appreciates that these positive approaches, judging from the evidence it has heard, are not universal.
49. The Committee is concerned to hear of the potential disconnect between concerns over air quality and the granting of planning decisions. While much of what has been said around planning has been positive, the placemaking aspect of CAFS - which says that air quality is not compromised by new or existing developments and where places are designed to minimise air pollution and its effects - must be achieved.
50. The Committee recommends that the Cabinet Secretary for Environment, Climate Change and Land Reform, along with the Minister for Transport and Islands, continue their discussions with the Minister for Local Government and Housing to ensure the planning and placemaking ambitions set out in CAFS are fully realised. Otherwise the active travel and sustainable transport aspirations of the Scottish Government will not be met. Air quality must be a key component in the reviews of the national planning framework and national planning policy.
51. Behaviour change remains a significant challenge and the Committee would welcome further detail on how the Scottish Government plans to address this.
52. The Committee also recommends that the Cabinet Secretary and Minister consider what additional mechanisms are required to resolve any disconnect between national agencies and local authorities in delivering the CAFS objectives. The Committee would also welcome further information on funding to support local authorities to deliver the CAFS outcomes.

Low Emission Zones

53. CAFS introduces a National Low Emission Framework (NLEF) to enable local authorities to appraise, justify the business case for and implement a range of air quality improvement options related to transport. This will support and build on the work already being done through the Local Air Quality Management system. The NLEF will develop a range of transport options, from Low Emission Zones (LEZ) and Clean Air Zones (CAZ) to traffic management and vehicle licensing regulations.
54. As previously noted, the [Scottish Government's 2017-18 Programme for Government](#) undertakes to create an LEZ in one city by the end of 2018. It will also work with the relevant local authorities to introduce LEZs into Scotland's four biggest cities by 2020 and into all Air Quality Management Areas by 2023 where the National Low Emission Framework (NLEF) appraisals advocate such mitigation.

Set-up and enforceability

55. Stephen Thomson from Transport Scotland responded with an emphatic "yes" when asked whether an LEZ will be in place by the end of 2018. He said that Transport Scotland was setting up LEZ delivery and leadership groups, chaired by Ministers, to make sure that they are "delivered on the ground." Mr Thomson said that the timescale for delivering LEZs is in three parts. The first is when the local authority publishes the design for the LEZ, the second is when the LEZ goes live while the third is when the LEZ enforcement begins. While Mr Thomson said that parts one and two will be in place for the first LEZ by the end of 2018, he was not however able to say when the LEZ would be enforced.^{xxviii}
56. Transport Scotland's confidence was supported by Glasgow City Council, which is to become the first city in Scotland to introduce an LEZ. Vincent McNally said:
-  The LEZ will be in place for 2018. That is in the committee paper that has been passed by Glasgow City Council.^{xxix}
57. While its submission was written prior to the [Programme for Government announcement](#), Aberdeen City Council was not as positive about the feasibility of an LEZ being in place by 2018 "due to the lack of guidance to support local authorities undertake the LEZ feasibility process, the complex technical and legislative process that must be explored and the lack of support to Transport Scotland who are primarily responsible for the development of the guidance and progress the elements required to enable the delivery of a LEZ."^{xxx}
58. SEPA believes that "Scotland is on target to implement a LEZ by 2018; however concerted action is required immediately to ensure this timescale does not slip. Due to the length of the lead-in time for making a LEZ operational including aspects

^{xxviii} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Cols 28-29.

^{xxix} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 19.

^{xxx} Aberdeen City Council. Written submission.

such as local authority committee agreement, legal considerations, financing, procurement, installation and staffing, implementation must be actioned at the earliest appropriate time."^{xxxix}

59. Organisations such as Transform Scotland and Sustrans believed that LEZs should be introduced as soon as possible and expanded where possible to other cities.^{xxxix}
60. The Road Haulage Association (RHA) was concerned about the "financial burden" placed on businesses, particularly SMEs, who may be "forced to invest in vehicles before they are naturally able to." It calls on any implementation of LEZs to be phased to allow businesses appropriate time to upgrade their fleets.^{xxxix} The Freight Transport Association (FTA) also have concerns about the level of focus being placed on LEZs to deliver air quality improvements. Chris MacRae, its Head of Policy, said that it was important to "learn lessons from a Glasgow pilot and digesting that before moving to other cities."^{xxxix} McGill's Bus Service meanwhile said that it was concerned it would be "bankrupt" as a result of a "last minute LEZ scheme" when planning and communication "should have taken place 5 years ago". It also highlighted the additional cost of running retrofitted vehicles which would result in "fares going up to meet these additional costs."^{xxxix}
61. There was also widespread support for the inclusion of private cars in LEZs. Paul White of the Confederation of Passenger Transport UK said that as the private car contributes as much as 75% of pollution in the Glasgow zone, "not to include the private car would be not to solve the issue of air quality in Glasgow—you have to include it." Phil Matthews of Transform Scotland said that "pollution is pollution" and that logically, any LEZ should be against all polluting vehicles, regardless of the type of vehicle."^{xxxix}
62. On the delay on the enforcement of LEZs, the Director of Government Relations at the Confederation of Passenger Transport UK, Paul White said that to reach the Euro 6 standard it would be "sensible" to provide a suitable lead-in time to allow bus fleets to be upgraded. He said that for projects in Europe and London it had been "four to five years" before the standard was reached. Otherwise, Mr White said, buses might not be available in those areas and therefore "you could have the perverse situation in which you introduce an LEZ and it encourages car use."^{xxxix}
63. In evidence, the Minister for Transport and Islands outlined the Scottish Government's work on LEZs and said that the collaboration and engagement with the four local authorities - Aberdeen City Council, the City of Edinburgh Council,

^{xxxix} SEPA. Written submission.

^{xxxix} Sustrans and Transform Scotland. Written submissions.

^{xxxix} Road Haulage Association. Written submission.

^{xxxix} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 26.

^{xxxix} McGill's Bus Service. Written submission.

^{xxxix} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 28.

^{xxxix} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Cols 26-27.

Dundee City Council and Glasgow City Council - had been "positive". The Minister also highlighted the importance of a phased approach to enforcement which he said had worked in other parts of the UK and Europe and that local authorities should be as "ambitious as possible" when considering whether LEZs should include private vehicles.^{xxxviii} The Cabinet Secretary for Environment, Climate Change and Land Reform said that she was chairing the steering group with the four local authorities to collaborate on implementing the LEZs. Nevertheless, Ms Cunningham said that there must be "a balance between having a national framework and giving local authorities the flexibility to design low-emission zones that work for them."^{xxxix}

64. Mr McNally of Glasgow City Council said that private vehicles should also be subject to LEZs and that a committee paper had been passed in Glasgow which stated that cars "will be included in subsequent phases of the low-emission zone."^{xi}

Resources and technology

65. The Committee was keen to understand what resources might be required to introduce low emission zones in Scotland's major cities and whether the local authorities had the technology, expertise and time to do so. It therefore [wrote to the Greater London Authority and Transport for London](#) to ask a number of questions in relation to its implementation of its low emission zone and more recent toxicity charge. In [its response](#), the Greater London Authority said it "piggy-backed" on its existing camera network used by the Congestion Charge but that, in its experience, it is possible to implement a scheme in the timeframe available to Glasgow City Council.^{xli}
66. On technology, Stephen Thomson of Transport Scotland said automated number plate recognition is already widely used in Scotland for bus lane enforcement and is "well understood by local authorities." Mr Thomson believed that "the cost of technology to monitor an LEZ is not the biggest component—the biggest cost is that of supporting the upgrading of the fleet."^{xlii}
67. On resources, at the point Mr McNally gave evidence the funding for the LEZ in Glasgow was not known. "Exactly what it will look like and how ambitious it will be" said Mr McNally, "will depend on the resources that are made available and will be subject to further discussions as the delivery group progresses."^{xliii} Since then, the [Scottish Government's Budget 2018-19](#) included £10 million for LEZ capital funding

xxxviii Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 17-21.

xxxix Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Col 22.

xi Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 23.

xli Greater London Authority and Transport for London. Letter to the Committee.

xlii Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Cols 29-30.

and £0.8 million for LEZ resource funding. It is not known whether Glasgow City Council considers these figures adequate to meet its needs.

68. While Mr Yousaf said he was unable to provide specific details on funding at that time due to the proximity of the publication of the draft budget, he emphasised the Scottish Government understood it would need "to provide some element of funding, whether that is to help with infrastructure and making the LEZs enforceable or, for example, for bus retrofitting or subsidising a green fleet or any other element of the zones." He added that the Scottish Government also expected local authorities to "come forward with funding." The Minister also expected the infrastructure for Glasgow's LEZ to be in place by the end of 2018.^{xliv}

Additional transport measures

69. A number of witnesses provided views on what other innovative measures could be put in place to discourage polluting forms of transport from entering town centres, such as congestion charging and workplace parking. The Confederation of Passenger Transport UK suggested that "the idea of congestion charging should not have been ruled out with the consultation on low-emission zones. We should seek views on that." Its Director of Government Relations, Paul White, also said that "workplace parking levies are a success in Nottingham, I believe, and should be considered."^{xlv} Phil Matthews of Sustrans also suggested that they were in favour of congestion charging:

” It is about creating the incentives and making sure that the more sustainable and healthier mode is the lower cost and more convenient mode wherever possible.^{xlvi}

70. When asked whether, if we are serious and ambitious about tackling poor air quality and should there be a place for congestion charging and for workplace parking levies, the Minister for Transport and Islands said that congestion charging is not part of the Government's policy. However, while LEZs are where the Government's "emphasis lies at the moment", Mr Yousaf said he was heartened by the number of local authorities who have approached him to ask when the Government will introduce legislation on the issue.^{xlvii}

xliii Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 19.

xliv Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 17-20.

xlv Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 11.

xlvi Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 12.

xlvii Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 23-24.

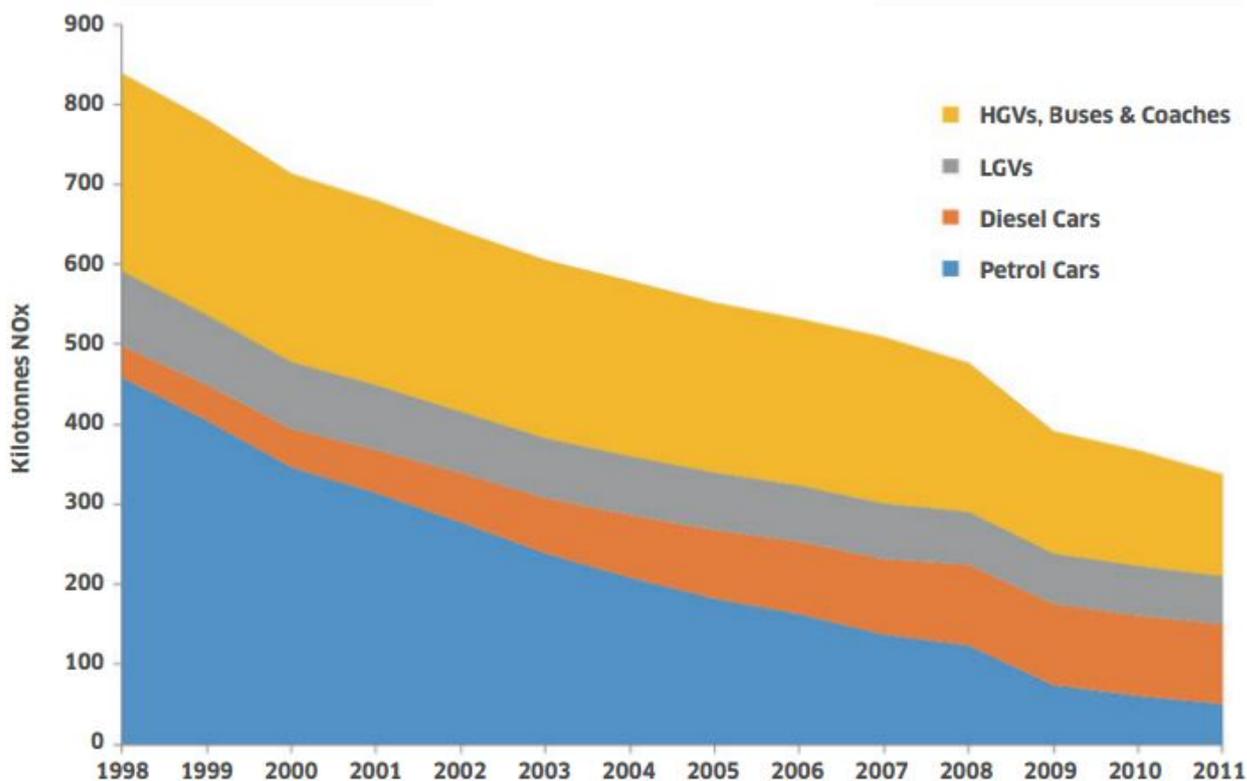
Conclusions

71. The Committee, while fully supporting the creation of low emission zones, has some concerns over the tight timescale around their introduction and whether the relevant local authorities have the necessary resources - both technical and financial - for them to be fully operational. The Committee notes that even if they are in place by the deadlines set by the Scottish Government, they will not be enforced for a number of years. This may cause some confusion to those using the LEZs, particularly bus operators and small freight firms.
72. The Committee recommends that the Scottish Government provides an update on the progress being made on the introduction of the four LEZs by the end of June 2018 along with an indication of the date of which they will be enforceable.
73. The Committee believes that for LEZs to best contribute to improvements in air quality in their respective areas, cars should be included. The Committee therefore recommends that the Scottish Government ask the relevant local authorities to include private vehicles in their LEZs.
74. Given the resources needed to implement LEZs, the Committee recommends that the Scottish Government, local authorities and all relevant public agencies work jointly to ensure that all available technology is shared to help ensure a consistent and efficient approach across the country.
75. The Committee further notes the view that congestion charging and workplace parking levies may also help to improve air quality and recommends that the Scottish Government explore these options following the introduction of the LEZs.

Diesel cars, buses and freight transport

76. Transport is clearly a major contributing factor to the Scotland's air quality. While the report focuses on whether Scotland has the right policies and plans to reduce harmful emissions from, it's worth noting that NO_x^{xlviii} emissions from all forms of road transport has more than halved since 1998.

Changes in UK NO_x emissions by vehicle type



Source: Source: [Air Quality and Road Transport: Impacts and Solutions. Ricardo Energy & Environment report to the RAC Foundation](#)

77. The Committee considers the three major contributors to NO_x emissions in turn - cars, buses and freight transport.

Cars

78. The Cleaner Air for Scotland Strategy provides a number of actions in relation to car use. It includes a commitment to encourage people to use their car less through a combination of local authority action plans, active travel choices, improved public transport options and public communication campaigns. It also supports a move to

^{xlviii} Together, NO and NO₂ are known as NO_x. NO_x is released into the atmosphere when fuels are burned (for example, petrol or diesel in a car engine, or natural gas in a domestic central heating boiler or power station). NO₂ can affect people's health. There is evidence that high levels of it can inflame the airways in the lungs and, over a long period of time, affect how well people's lungs work. People with asthma are particularly affected. Source: [DEFRA](#).

low emission vehicles and fuels. As the majority of these commitments are covered in other areas of this report, this section focuses on the impact of current vehicle emissions and how alternative fuels might reduce this over time.

79. Since the launch of CAFS, the [Scottish Government's Programme for Government 2017-18](#) set out "a bold new ambition on ultra-low emission vehicles" with a target to phase out the need for petrol and diesel vehicles by 2032 to be underpinned by a range of actions to expand the charging network, support innovative approaches as well as encourage the public sector to lead the way. This followed a [UK Government policy paper on air quality](#) which will ban the sale of new diesel and petrol cars in the UK by 2040.
80. In relation to the problems caused by non-electric vehicles, Dr Scott Hamilton, from Ricardo Energy & Environment, believed that the "dieselisation process" over the past 15 years has led to the current air quality problem and that diesel cars were the "elephant in the room." Dr Hamilton said that a brand new diesel car will emit "probably 10 or 15 times more NOx than a brand new petrol car."^{xlix} He added:
- ” The reason why we are here today is that we have a measured problem with air quality in our cities and towns. I am 100 per cent sure that most of that problem has arisen from there being too much diesel in the car fleet, in the wrong place, at the wrong time, in the wrong technology. Although the aims of the CAFS strategy are admirable, there is a fundamental problem in how we fuel our private vehicles in the UK. To be blunt: if there was no diesel, there would be no problem.ⁱ
81. Cycling Scotland highlighted that more than 99% of vehicles on the road in Scotland are either petrol or diesel. While it acknowledged that the uptake of electric and hybrid vehicles increased between 2014 and 2015, but "these vehicles still account for less than 1% of vehicle share."ⁱⁱ
82. Vincent McNally of Glasgow City Council also considered diesel vehicles to be the primary polluter. He said that "on the car side, 90 per cent of the emissions are being produced by diesel vehicles" and that diesel cars and buses are the "main issues in Glasgow."ⁱⁱⁱ
83. The Committee also asked about the current EU emission standards for diesel and petrol vehicles. Transform Scotland said that while EU had attempted to introduce increasingly demanding limits on the emissions of all combustion engines, it is now widely understood that these "been circumvented by car manufacturers."ⁱⁱⁱ Graham Applegate from SEPA said that he hoped changes to the test cycles in the coming years will mean "we will get a greater understanding of the real-world driving conditions." Stephen Thomson added that Transport Scotland was speaking with the Greater London Authority and a group called Emission Analytics who are

^{xlix} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 23.

ⁱ Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 22.

ⁱⁱ Cycling Scotland. Written submission.

ⁱⁱⁱ Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 25.

combining to create a new index to analyse any disparities in emissions. Mr Thomson said that Transport Scotland is "exploring what that might bring to Scotland."^{liv}

84. Humza Yousaf, the Minister for Transport and Islands, said that the Scottish Government's work on reducing air quality, including its work on electric vehicles and phasing out the need for new diesel and petrol cars by 2032, is "going in the right direction."^{lv}

Conclusion

85. While diesel cars may be more fuel-efficient and produce less harmful CO₂ emissions than petrol cars, the Committee recognises that they clearly produce more NO_x emissions than other fuels which heavily contribute to poor air quality in many urban areas. It also understands the public confusion over the associated health dangers over diesel emissions given the road fund licence reductions available to cars with low CO₂ emissions over the past 20 years. The Committee was therefore encouraged by the recent figures for car sales in the UK during 2017 that showed a 17% drop in sales for diesel cars to an overall market of 42% (down from 47.7% in 2016). There was also a 34.8% increase in the sale of electric or partially electric vehicles, albeit with only an overall market share of 4.7% (up from 3.3% in 2016).^{lvi}
86. The Scottish Government announcement to phase out new petrol and diesel cars and vans across Scotland by 2032, combined with an increase in charging points for electric vehicles, is therefore clearly to be welcomed. Combined with Scottish Government targets, the Committee recognises that the cost and availability of electric vehicles will also play a major part in people moving to alternative fuels but that Scotland's planning process, covered elsewhere in this report, must enable the infrastructure to support this move to alternative fuelled vehicles be in place for motorists.

87. The Committee is clear that the harmful emissions from diesel cars is one of the major contributors to poor air quality. The Committee welcomes the Scottish Government's commitment to phase out both petrol and diesel cars and vans by 2032 but recommends that the Government provides a timeline for how it intends to reach this commitment including any legislative measures, non-legislative regulation and incentives to reach its target. The timeline should include milestones the Scottish Government aims to reach between now and 2032 to ensure that it on schedule to meet the commitment.

liii Transform Scotland. Written submission.

liv Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 37.

lv Environment, Climate Change and Land Reform Committee. *Official Report, 7 December 2017*, Col 34.

lvi *Car Magazine (2018)* [2017 new car registrations: Vauxhall, diesel and the climate the big losers.](#)

88. The Committee also recommends that the Government provides details for what this will mean in practice for diesel car and van owners and its plans for ensuring that there is the necessary national and local infrastructure for alternative vehicles to facilitate this.

Buses

89. Buses clearly provide vital transport for millions of Scots. The most recent edition of [Scottish Transport Statistics](#) reported that:

- 409 million journeys were made by bus in Scotland in 2015-16;
- although this was down 2% on 2014-15 figures and a 16% fall from a peak in 2007-2008; while
- bus fleet numbers have also fallen by 11% over the previous 5 years.^{lvii}

90. CAFS highlights that buses are the most frequently used and most widely available mode of public transport in Scotland and that they are "is loosely regulated and services are diverse, reflecting the characteristics of the different communities they serve." CAFS also includes a number of actions for bus services:

- Review support for green buses will be reviewed by 2016 including scope for supporting retrofitting existing vehicles, taking account of technological and market developments and the need to tackle air quality as well as climate change.
- Evaluate the Bus Investment Fund in 2016 to learn from supported projects and inform decisions on options for future support for local projects to improve public transport.
- The Bus Operators Grant will be reviewed by 2016 including options to incentivise the use of low emission buses.
- By 2016, review guidance and legislation on the powers of local transport authorities regarding bus service to see if they could be made more effective and to ensure enough priority is given to air quality alongside other considerations.^{lviii}

91. The Confederation of Passenger Transport UK considered that CAFS had "failed to deliver" on many of these promises, with no review of the Bus Investment Fund, Bus Service Operators' Grant or of guidance and legislation on the powers of local transport authorities.^{lix} The 2016 CAFS Progress Report said that Transport Scotland is reviewing how the Green Bus Fund will function post 2017, while the Bus Service Operators' Grant and Bus Investment Fund are both being reviewed, with the latter nearing completion. The Progress Report also said that proposals are

^{lvii} Transport Scotland. [Scottish Transport Statistics No 35: 2016 Edition](#).

^{lviii} Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

being developed for "inclusion in a consultation on a miscellaneous Transport Bill which has been proposed for later in the Parliamentary term. This work may also influence the development of guidance for local and/or regional transport strategies."^{lix} Lothian Buses said that the 2016 Progress Report showed that "all key areas under public transport remain under review with no further information."^{lxi}

92. Friends of the Earth Scotland (FOES) believed that support for buses was inadequate and that the sector needs to be "properly engaged with and supported" to make the transition to cleaner buses. It also recommended that the forthcoming transport bill give local authorities greater powers over bus services so that they "operate in the public interest rather than at the whim of different private operators." Local councils, say FOES, should be able to "regulate fares, plan routes, introduce integrated ticketing systems, and operate entire networks rather than attempting to join up piecemeal services in an incredibly challenging financial climate."^{lxii}
93. The Committee also heard evidence on how bus operators might have to adapt to comply with LEZs. Stephen Thomson from Transport Scotland estimated that "upwards of 1000" buses will have to be retrofitted or upgraded. Mr Thomson believed that the bus sector is "doing its fair bit to improve the fleet across Scotland." Lothian Buses said that bus operators were only engaged by Transport Scotland in May 2017 on the potential for LEZs in Scotland and said that it does not currently "seem feasible that the deadline will be met."^{lxiii}
94. Phil White of the Freight Transport Association said that while the Green Bus Fund was helpful, it only provided up to 80% of the price difference between a standard bus and a low-carbon bus. As operators had to bid for access to the fund, Mr White said that they "probably have to pitch lower than 80 per cent." He added that while the Green Bus Fund has incentivised the purchase of over 300 low-carbon vehicles, that is only half of the total number of such vehicles in operation in Scotland so operators are investing in such buses. However, Mr White believed that with the review of the Bus Service Operators' Grant and the potential for franchising under the proposed transport bill, it was "difficult for operators to make a case for accelerating fleet investment; indeed, they might even choose to pause it." Phil Matthews of Transform Scotland added that subsidies for buses are a very small percentage of the overall transport budget and that more has to be done to "reinvigorate buses in Scotland and make them greener."^{lxiv}
95. Lothian Buses said that buses and active travel were in fact "the solution to helping to improve air pollution" and that one bus represents 75 vehicles removed from the road. It added that a Euro VI diesel bus emits ten times less harmful emissions per

lix Confederation of Passenger Transport UK. Written submission.

lx Scottish Government. (2016) *Cleaner Air for Scotland: The Road to a Healthier Future - 2016 Progress Report*.

lxi Lothian Buses. Written submission.

lxii Friends of the Earth Scotland. Written submission.

lxiii Lothian Buses. Written submission.

lxiv Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 5.

passenger than a diesel car so "only by addressing congestion and prioritising public transport and active travel, will overall emissions start to reduce."^{lxv}

96. A further concern highlighted during the inquiry was the possibility of older, more polluting buses being removed from operating in LEZs and instead used in other areas. The Confederation of Passenger Transport UK said that should an operator put the newest vehicles within an LEZ this could have "an adverse affect on air quality for the areas outwith the zone, where older vehicles will run."^{lxvi} Vincent McNally from Glasgow City Council did not however consider this issue "much of a concern" as such buses can be retrofitted rather than moved to a different area. Mr McNally also said that as retrofitted buses will likely travel beyond LEZ boundaries, the surrounding areas will instead benefit from their introduction.^{lxvii}
97. Humza Yousaf said that the Green Bus Fund had already been used to help 'green' 362 vehicles at a cost of £16.2m. The Minister for Transport and Islands said that in talks with the bus operators such as Lothian Buses, McGill's, First Bus or Stagecoach, as well as smaller operators, he believes that all of them are "greening their fleets in some way", either through the Green Bus Fund or independently. Mr Yousaf said that some companies have said that rather than have a retrofitting scheme, they would prefer to have assistance with subsidising the cost of Euro 6 or even fully electric buses and so considered there were "different solutions for different companies."^{lxviii}
98. On the establishment of LEZs, the Minister acknowledged that it takes time for buses to be built and that overall he was keen for a phased approach to enforcement. Mr Yousaf also said that the Scottish Government is looking to review the Bus Service Operators' Grant and, while nothing had yet been agreed, might tier the grant to "ensure that the greatest help is given to Euro 6 rather than Euro 4 buses." Nevertheless, the Minister said "the message to the bus operators is that they also have to put their money where their mouths are. They understand that and they are doing so to a large extent."^{lxix}

Conclusions

99. The Committee recognises the significant role buses have in offering a viable alternative to car travel and can therefore improve air quality while reducing congestion. The Committee is however concerned to see that many of the actions set out in CAFS and due to be delivered in 2016 have still not been completed. These delays, particularly with the move towards LEZs, are unhelpful for the industry. As has been mentioned previously in this report, the CAFS Progress Report could be much improved to enable an easier read across between committed actions and progress.

^{lxv} Lothian Buses. Written submission.

^{lxvi} Confederation of Passenger Transport UK. Written submission.

^{lxvii} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 21.

^{lxviii} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Col 9.

^{lxix} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 18-19.

100. The Committee acknowledges that the support for bus operators, many of which are private firms, can be complex. The Green Bus Firm has clearly proved to be a popular means of upgrading fleets and lowering emissions. However, if Transport Scotland's estimate of 1000 buses requiring upgrading for Glasgow's proposed LEZ alone, such funds may require to be expanded or enforcement of the LEZs delayed to enable operators to comply with requirements. The Committee was also concerned to learn that Transport Scotland only engaged with bus operators on the potential for LEZs in Scotland in May 2017.
101. On a wider point, the Committee was concerned to see passenger numbers for buses fall back in the past 5 years. While access to buses, particularly in more rural communities, touches on wider economic and social issues, the Committee considers the affordability, availability and accessibility of buses to be a significant contributor to helping people leave their cars at home. For air quality to improve, it would therefore be expected that passenger numbers should be moving in the opposite direction.
102. The Committee seeks detailed explanation of the delay in the roll out of the relevant public transport actions in the Cleaner Air for Scotland Strategy along with a revised timetable for delivery.
103. The Committee recognises that compliance with the proposed LEZs will come at a significant cost. It recognises the Scottish Government is already providing financial assistance in this regard. The overall cost is unclear. Therefore, the Committee seeks details from the Scottish Government of the best available estimates for these zones, broken down by both city and the private/public purse.

Freight transport

104. The Cleaner Air for Scotland strategy lists two specific actions for active travel:
1. encourage each local authority with an AQMA to [create a Freight Quality Partnership](#) (or utilise an existing RTP Freight Quality Partnership) and consider appropriate measures for local air quality improvement by 2017; and
 2. encourage Freight Quality Partnerships to extend their activities to include consideration of the environmental impact of freight transport.^{lxx}
105. CAFS went on to describe Freight Quality Partnerships as forums which have been set up by most regional transport partnerships to address the environmental impact of freight transport. However, the 2016 CAFS progress report's only mention of Freight Quality Partnerships was to say that "[guidance on setting up Freight Quality Partnerships \(FQPs\)](#) remains available."^{lxxi}

lxx Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

lxxi Scottish Government (2016) [Cleaner Air for Scotland: The Road to a Healthier Future - 2016 Progress Report](#).

106. Some of the evidence received by the Committee touched on the move by the haulage industry to Euro VI compliant engines. Stephen Thomson of Transport Scotland said these engines are much cleaner than the older technology they have replaced and have been "proven to work in the real world at the level that they should work at, rather than at the theoretical level based on laboratory work."^{lxxii} This view was echoed by the Road Haulage Association (RHA), which said that the "ultra-low emission" Euro VI engines in heavy goods vehicles and buses should not be confused with Euro 6 standards in car and van emission testing, as Euro VI engines "have been tested and shown to perform to standard in real-world operation." The RHA equated this to a reduction of one third of NOx emissions from HGVs since Euro VI engines were introduced in 2014. It added that while air quality issues need to be tackled, there is a lack of evidence in relation to the air quality impacts of HGVs and that LEZs should instead focus on the "worst performing buses and taxis".^{lxxiii}
107. The Freight Transport Association (FTA) also focused on the benefits of the new engine technology. While believing that alternative fuelled commercial vehicles are still "some way off", the move to Euro VI vehicles would bring the "most significant improvement in air quality relating to commercial vehicles".^{lxxiv} However, its Head of Policy, Chris MacRae, said that Government support around the use of alternative fuels - whether UK or Scottish Government - must be consistent for business to invest, otherwise there is no "long-term fiscal certainty."^{lxxv}
108. The Committee also raised the issue of freight consolidation centres. This had previously been highlighted by the Parliament's then Infrastructure and Capital Investment (ICI) Committee in its [inquiry into freight transport in Scotland](#) in 2015. Such centres would consolidate deliveries on the outskirts of urban areas before being delivered in smaller and potentially cleaner vehicles to their destinations. The ICI Committee recommended that the "Scottish Government explore opportunities for increasing the use of electric vans, cargo bikes and other forms of sustainable transport for last mile deliveries in Scottish towns and cities and to identify what is needed to encourage an increase in such vehicles."^{lxxvi}
109. Stephen Thomson confirmed that Transport Scotland is "actively looking" at freight consolidation centres and is in on-going discussions with the RHA and FTA. Mr Thomson added that there are several stages involved with such centres, including bringing larger vehicles to those locations and the "so-called last-mile logistics" being undertaken in lower-emission or zero-emission vehicles.^{lxxvii} Chris MacRae confirmed the FTA's involvement and, as Chair of the Urban Freight Subgroup of the Scottish Freight Logistics Advisory Group (ScotFLAG) of Transport Scotland,

^{lxxii} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 25.

^{lxxiii} Road Haulage Association. Written submission.

^{lxxiv} Freight Transport Association. Written submission.

^{lxxv} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 10.

^{lxxvi} Infrastructure and Capital Investment Committee. 6th Report, 2015 (Session 4). [Inquiry into freight transport in Scotland](#) (SP Paper 772).

said that is is producing "guidance on best practice for urban deliveries and look at how planners, local authorities, developers, businesses that generate freight and freight operators can work together." Mr MacRae however cautioned that any breaks in the supply chain will nevertheless have an implication on the cost of the goods "unless, of course, it is going to be funded by the state or a local authority in some way."^{lxxviii}

110. Chris MacRae of the FTA also highlighted the potential for greater utilisation of night-time deliveries which had previously been a success during the 2014 Commonwealth Games. Mr MacRae said that the FTA "would like one of the legacy benefits from that to be greater flexibility in delivery hours, greater use of road space, and priority for commercial vehicles in traffic calming—we would rather avoid traffic calming for commercial vehicles—because that is another way of reducing emissions in the city environment." Night time deliveries were also highlighted by the ICI Committee in its 2015 report. At that time, the Road Haulage Association had also praised the operations during the Commonwealth Games "because of the joined-up nature of the organisation" but said that this was a "one-off, rather than the norm." The ICI Committee recommended that the Scottish Government "explore the opportunities and challenges of allowing night time deliveries in more urban areas."^{lxxix}
111. The CAFS 2016 progress report said that the ScotFLAG Urban Freight Subgroup had been set up at the start of 2016 in response to the findings of the ICI Committee's inquiry. The remit of the group is to "share best practice, identify opportunities, and co-ordinate activity aimed at increasing the sustainability, safety and efficiency of freight movements in Scotland's urban areas in order to tackle the environmental and safety challenges posed by urban freight movements, including air quality."^{lxxx}
112. The Minister for Transport and Islands described the evidence on freight consolidation centres as "a bit mixed", that they have "not had quite the impact that people expected" but said "I am not taking them off the table by any stretch of the imagination." Mr Yousaf was however more enthusiastic about moving freight from road to rail and that "we are on the cusp of some really exciting projects." The Minister said that while he saw "huge opportunities" for both timber and Scotland's food and drink industry, he was unable to say any more at that time. However, he said that "if we crack some of those, the floodgates will really open for the development of a number of other schemes. We have Government funds—the freight facilities grant and other funds—to assist in shifting freight from road to rail."
113. Chris MacRae, who also heads up the FTA's UK rail freight policy work, had also highlighted the benefits of moving freight from road to rail but said that it was more

^{lxxvii} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 41.

^{lxxviii} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 9.

^{lxxix} Infrastructure and Capital Investment Committee. 6th Report, 2015 (Session 4). *Inquiry into freight transport in Scotland* (SP Paper 772).

^{lxxx} Scottish Government. (2016) *Cleaner Air for Scotland: The Road to a Healthier Future - 2016 Progress Report*.

suitable for long distance bulk freight rather than bringing goods into city centre stations. Infrastructure investment to improve existing rail freight terminals and also better access to ports, such as Grangemouth, were also recommended in the ICI Committee's report.^{lxxxix}

Conclusions

114. The Committee is heartened by the range of potential actions to reduce emissions from freight transport and looks forward to hearing more of the Scottish Government's plans for rail freight. However, it is unsure of the work of the Freight Quality Partnerships highlighted as part of the list of actions in CAFS given how little prominence was given to them in the 2016 progress report.
115. The Committee notes the focus in the progress report on the Urban Freight Subgroup of the Scottish Freight Logistics Advisory Group which was set up in response to the findings of the Infrastructure and Capital Investment Committee's 2015 inquiry into freight transport in Scotland. Nevertheless, some of the areas highlighted in that report, such as the potential freight consolidation centres and night time deliveries, do not appear to have made much progress since 2015. In particular, night time deliveries, which do not appear to require the level of investment as consolidation centres, seem to be an issue of local authority planning and guidelines for operators. This has the potential of reducing the level of vehicles in urban areas during the day and therefore reducing harmful emissions at peak hours.
116. The Committee recognises the potential benefits to air quality in removing freight from the roads, particular during peak times in urban areas and recommends that the Scottish Government provide an update on its plans for consolidation centres, moving freight from road to rail and night time deliveries.
117. Given the Scottish Government's plans to phase out both petrol and diesel cars and vans by 2032, the Committee asks the Scottish Government to set out detailed plans for assisting the road haulage industry in moving, over time, to alternative fuelled vehicles.

Active travel

118. The Cleaner Air for Scotland strategy lists two specific actions for active travel:
1. finalise and deliver the National Walking Strategy Delivery Plan by 2016; and
 2. work with partners to deliver our shared vision in the Cycling Action Plan for Scotland that by 2020, 10% of everyday journeys will be made by bike.^{lxxxii}
119. In the Scottish Government's 2016 progress report, it said that the [National Walking Strategy Action Plan](#) was launched on 3 March 2016 while reiterating its "commitment to achieving the shared vision of 10% of everyday journeys to be made by bike by 2020."^{lxxxiii} In its [Programme for Government 2017-18](#), the Scottish Government committed to doubling investment in active travel from £40 million to £80 million a year from 2018-19.
120. In evidence, Stephen Thomson of Transport Scotland was asked whether the Scottish Government will reach the 10% of everyday journeys made by bike by 2020 given the current level is around 2%. Mr Thomson said that his colleagues in Transport Scotland were "confident about working towards that target."^{lxxxiv} Phil Matthews of Transform Scotland, while welcoming the increase in active travel funding, was less confident of meeting the 10% target by 2020: "it is probably too little, too late". Mr Matthews nevertheless considered that even if the target is not met, it should still be attempted.^{lxxxv}
121. Friends of the Earth Scotland said that that cycle journeys had stalled at around 1% of all trips and that Transport Scotland statistics suggest this is due to concerns about traffic, safety and infrastructure. It recommends that the Scottish Government should invest 10% of the transport budget in "safe, dedicated active travel infrastructure in order to tackle this barrier."^{lxxxvi} This level of active travel expenditure was supported by other groups, including Cycling UK and Stop Climate Chaos Scotland.^{lxxxvii}
122. The Committee received further evidence on the need to support a greater behavioural shift from polluting vehicles to active travel. Spokes Planning Scotland believed an important barrier was an absence of adequate public education to warn against the financial and health costs of driving.^{lxxxviii} Craig McLaren of the Royal Town Planning Institute Scotland said that some of the responsibility for this

^{lxxxii} Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

^{lxxxiii} Scottish Government (2016) [Cleaner Air for Scotland: The Road to a Healthier Future - 2016 Progress Report](#).

^{lxxxiv} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 22.

^{lxxxv} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 18.

^{lxxxvi} Friends of the Earth Scotland. Written submission.

^{lxxxvii} Cycling UK and Stop Climate Chaos. Written submissions.

behaviour change should come from individuals and that they should "not just wait for the Government or someone else to do it for them."^{lxxxix} Mr McLaren nevertheless said that he would like "greater recognition of the role that active travel can play" and that the increased funding for active travel is used in the right way so that it has "maximum impact." Cycling UK also said that significant modal shift will not be achieved by behaviour change alone. Rather, "high quality segregated infrastructure is key to generating modal shift to cycling for everyday trips."^{xc}

123. Alex Quayle from Sustrans Scotland said that there should be "more of an onus on developers" to fund infrastructure investment, particularly when establishing new communities which have no existing walking or cycling links.^{xc}
124. In its letter the Greater London Authority and Transport for London referred to a target that the Mayor has set for "80 per cent of journeys to be undertaken by foot, bike or public transport by 2041, up from 64 per cent today" and noted that "the generalised shift away from private car use towards walking, cycling and public transport in London has contributed to the reduction in emissions."^{xcii}
125. On meeting the 10% target for cycle journeys by 2020, the Minister for Transport and Islands and acknowledged that it will be difficult to achieve but the Scottish Government will be "striving" to meet the target. However, he said that in getting "hung up" on meeting the target, we "will be in danger of losing sight of the big picture." Doubling the active travel budget, Mr Yousaf said, would nevertheless "significantly" help to reach the target and that the funding must be spent in the right way to ensure "we get the most bang for our buck." He said a large part of the funding will be spent on cycling infrastructure and that he was "a big believer in segregated cycling infrastructure, because it is important for giving people the confidence to get on their bikes." The Minister also agreed that there was a lot to be done on behavioural change to promote the benefits of cycling - both for individuals and businesses - and "we should not be afraid to try new initiatives and incentives to get people to be active, whether through cycling or walking."^{xciii}

Conclusions

126. The Committee recognises the sizeable increase in the active travel budget for 2018-19. The Committee also acknowledges the focus of this funding on cycling infrastructure and the Minister's belief in the importance of segregated infrastructure to give people confidence to get on their bikes.

^{lxxxviii} Spokes Planning Scotland. Written submission.

^{lxxxix} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 46.

^{xc} Cycling UK. Written submission.

^{xc} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 14.

^{xcii} Greater London Authority and Transport for London. Letter to the Committee.

^{xciii} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 25-26.

127. The Committee acknowledges that the 10% target for cycle journeys by 2020 is a target. Nevertheless, it was made in Scottish Government's 2010 [Cycling Action Plan for Scotland](#) and has therefore been a long standing and much publicised commitment. The Committee notes that in the Netherlands, regarded as one of the best countries in Europe for cycling, 27% of all journeys are made by bike^{xciv}, while that figure rises to 36% in Amsterdam.^{xcv}
128. While Transport Scotland asserted that the target would still be met, the Minister acknowledged that it would be difficult to achieve. Indeed, the most recent version of the [Cycling Action Plan for Scotland](#) which was published in 2017 showed that everyday journeys by bike stood at 2.2% - up from 2.0% in 2010. With a rate of progress of 0.2% every 6 years, it would take approximately 239 years - to 2252 - to reach the 10% target.
129. The Scottish Government's [Cycle Action Plan for Scotland](#) said that levels of cycling to work vary across Scotland, with urban areas having a higher level of cycling (3.4% in large urban areas; 2.1% in smaller urban areas) compared to towns and rural areas (around 1% or less).^{xcvi} The Committee questions what target urban areas will be required to meet to reach an overall level of 10% if there is a reduced target in rural areas.
130. Given the small increase in journeys made by bike in the first 6 years of the decade, and despite the recent doubling of active travel funding, the Committee considers that based on current evidence the target will not be met. The evidence received on the need for the public to feel safe while cycling, some of which highlights Transport Scotland's own research, strongly points to the need for safe infrastructure to begin to see this figure rise. The Committee considers safe infrastructure to be a significant factor in getting people on their bikes, it is vital that additional active travel funding is properly targeted to make a step change in cycling take-up.

131. The Committee considers that to meet both air quality and wider climate change targets, increasing the number of journeys by bike to 10% and beyond is necessary. The Committee recommends that the Scottish Government complete a full review of why the percentage of journeys only rose by 0.2% between 2010 and 2016 and sets out a detailed delivery plan to overcome the barriers to progress, including around placemaking and training. The Committee also asks the Scottish Government to provide a breakdown of its spend on safe infrastructure for active travel and what level of additional investment in such infrastructure may be required to meet the 10% target.
132. While highlighted in an earlier chapter of this report, the Committee considers that it is imperative that active travel is a key component of any update of planning regulations and guidance and recommends that the Scottish Government make this a similar priority so that suitable walking and cycling

xciv Centre for Public Impact (2016) [The rise of cycling in the urban areas of The Netherlands](#).

xcv City of Amsterdam (2017) [Amsterdam Long-term Bicycle Plan 2017 – 2022](#).

xcvi Scottish Government (2010) [Cycling Action Plan for Scotland](#).

infrastructure is at the heart of all future developments. Furthermore, the Committee asks that the Scottish Government consider what further planning guidance is required to support local transport strategies and ensure a consistent approach across the country.

133. The Committee also recommends that the Scottish Government breaks down its active travel targets for urban and rural areas to show the expected rate of uptake in different parts of the country.

Monitoring air quality

134. The Committee heard a range of evidence on how air quality is monitored across Scotland, including:
- who is responsible for air quality monitors;
 - how their locations are chosen;
 - how their recordings are used by local authorities and/or national agencies; and
 - whether the data recorded is readily available to the general public.
135. Graham Applegate, Principal Policy Officer for Air Quality at the Scottish Environment Protection Agency (SEPA) confirmed that there are 95 'automatic monitors' in Scotland which are the responsibility of local authorities and are used to fulfil two different purposes - readings for EU compliance and for local authorities' own purposes. Mr Applegate said that SEPA has two trailer monitors for use at "large-scale industrial incidents" but these can also be used by local authorities if available. He acknowledged that automatic monitors are expensive to install but that funding was available from the Scottish Government, albeit this is "limited". However, Mr Applegate said that local authorities can also carry out 'non-automatic monitoring' using smaller devices to which helps them review and assess air quality in their areas. He added that "in most cases, SEPA is content with the level of monitoring taking place" and that local authorities are "doing the best job that they can do within the financial and practical constraints that they have."^{xcvii}
136. Vincent McNally of Glasgow City Council supported SEPA's view that local authorities can carry out additional air quality monitoring. He said: "We have an extensive network of more than 100 monitoring locations across the city. The trends have generally shown improvement over the past five years. We have monitoring data going back much longer than that. The network has been expanded year on year. We are in the process of adding more PM2.5 monitors, which should be in place for the start of 2018."^{xcviii} Dr Scott Hamilton of Ricardo Energy & Environment nevertheless questioned the data from non-automatic monitoring stations, which he said were not as accurate as automatic monitors. Despite being considered an appropriate way to measure NO_x by both the UK and Scottish Governments, Dr Hamilton said that they are "not good enough" and that more automatic stations are required.^{xcix}
137. The positioning of some of the monitors was also questioned. Paul White from the Confederation of Passenger Transport UK gave some anecdotal evidence of the

^{xcvii} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Cols 32-33.

^{xcviii} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 3.

^{xcix} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Cols 32-33.

positioning of an air monitoring station at Hope Street in Glasgow which he said was "right beside a taxi rank, where the taxis all sit with their engines idling."^c

138. Meanwhile, Sustrans said that while local authorities have a duty to monitor and report on air pollution, the legal requirements for them to act on the results were "vague" and while SEPA has the power to direct local authorities when they don't meet their obligations, these powers have "never been exercised."^{ci} Friends of the Earth Scotland said that local authorities should "not be burdened with an obligation" to achieve the EU standards because often they cannot control emissions from neighbouring authorities or trunk roads. It instead considered that there is a regulatory gap which explained why there are still so many air quality management areas which exceed European standards - currently 38 - and why "so few have ever been revoked."^{cii}
139. Transport Scotland said that it relied on local authority monitors for its trunk road network. Stephen Thomson, its head of Environment & Sustainability, said that it also uses relatively low cost air quality sensors to highlight trends which can be quickly deployed when required.^{ciii}
140. A number of witnesses commented on the accessibility of the various levels of data held by local authorities and how these can best be highlighted to the public. Alex Quayle of Sustrans said that it was surprising that there was not more public visibility of air quality readings, given the information on water quality available at beaches: "there are many more people breathing in the air in our cities than are having a swim, so it is somewhat surprising that we have not done that yet."^{civ} Professor Mark Sutton from the NERC (Natural Environment Research Council) Centre of Ecology & Hydrology referenced a visit to Delhi where there was "a big billboard on the side of the road" that provided the current air quality level so as to raise awareness.^{cv}
141. SEPA said that the Scottish Government's [Scottish air quality website](#) provides an air quality forecast up to four days in advance although added the caveat that this was weather dependent and should be "taken only as an indicator."^{cvi} Vincent McNally said that the website gives "fantastic minute-by-minute data on levels of pollution in specific areas" but acknowledged that this was only from Glasgow's 12 automatic monitoring stations.^{cvi}

^c Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 21.

^{ci} Sustrans Scotland. Written Submission.

^{cii} Friends of the Earth Scotland. Written submission.

^{ciii} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 23.

^{civ} Environment, Climate Change and Land Reform Committee. *Official Report, 7 November 2017*, Col 22.

^{cv} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 37.

^{cvi} Environment, Climate Change and Land Reform Committee. *Official Report, 31 October 2017*, Col 35.

142. In relation to air pollution outside schools, the Committee had previously heard evidence, at its session on 2 May 2017, about 10 air quality monitors SEPA would allocate to schools to help children better understand air pollution and encourage behaviour change in both the pupils and their parents. Dr Colin Ramsay, Consultant Epidemiologist at Health Protection Scotland, said that he was more concerned with the health implications of schools next to busy roads rather than the school run itself, where pollution dissipates.^{cviii} In its written submission for the inquiry, West Lothian Council believed that "steps should be taken to make idling of vehicles, and in particular idling near schools or within air quality management areas, as socially unacceptable as the success witnessed in relation to smoking indoors."^{cix}
143. In its letter to the Committee, the Greater London Authority and Transport for London referred to work underway with primary schools in highly polluted areas to provide advice on how to improve the air that the school children breathe, and gave examples of the type of recommendations than an air quality audit for a school may make including:
- moving school entrances and play areas to reduce exposure to busy roads;
 - 'no engine idling' schemes to reduce harmful emissions during the school run;
 - changes to local roads, including improved road layouts, restricting the most polluting vehicles around schools and pedestrianisation around school entrances;
 - 'green infrastructure' such as 'barrier bushes' along busy roads and in playgrounds to 'block' out toxic fumes; and
 - encouraging walking and cycling through competitions, 'walking buses' with large groups of pupils walking together on pavements, plus improving cycle and walking routes.^{cx}
144. On schools, Roseanna Cunningham, the Cabinet Secretary for Environment, Climate Change and Land Reform said that the Scottish Government recognised the negative impact of poor air quality on health, particularly to already vulnerable groups such as "young people with respiratory ailments." However, it does not have any "specific plans related to schools" and the Cabinet Secretary believed that the monitoring network is the best way to use resources. The Minister for Transport and Islands, Humza Yousaf, added that Scottish Government guidelines on 20mph limits around schools helps to meet both road safety and air quality objectives.^{cx}

^{cvii} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 33.

^{cviii} Environment, Climate Change and Land Reform Committee. *Official Report, 2 May 2017*, Col 18.

^{cix} West Lothian Council. Written submission.

^{cx} Greater London Authority and Transport for London. Letter to the Committee.

^{cx} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Col 30.

145. In relation to the potential need for more automatic monitoring stations across Scotland, Ms Cunningham believed that there was already a "comprehensive monitoring network" in operation and that a "exponential increase" was not required. The Cabinet Secretary added that the Scottish Government constantly keep monitor numbers under review but as the "kit is not cheap, we need to think carefully about where monitors should be deployed." Ms Cunningham also said that SEPA is undertaking modelling work to assist local authorities in identifying pollution hotspots.^{cxii}

Conclusions

146. The Committee appreciates that automatic monitoring stations are expensive and that in-depth consideration must be given to where they are located. However, it is concerned that only having 95 such monitors across Scotland - which equates to less than 3 monitors per local authority - does not appear to give sufficient importance to the study and possible mitigations to poor air quality. While the Committee applauds local authorities for investing in non-automated monitors to achieve a greater understanding of local air quality issues, it is concerned that the data these devices gather is potentially inaccurate.
147. The Committee is also uncertain about who is ultimately responsible for tackling AQMAs if it is difficult to ascertain where the emissions stem from. It sees a gap for local and national agencies to work together so that all the available data can be used to provide up-to-date computer modelling of relevant areas to make the best available assessment of emissions.
148. In relation to highlighting the awareness of air quality issues to both young people and the general public, the Committee welcomes SEPA's effort to work with schools and also the Scottish Government's air quality website. However, despite CAFS promise to develop a national air quality campaign, the Committee does not believe the website to be well known. It considers that there is an opportunity for automatic monitors to be better publicised and made more interactive so that their recordings are more obvious and understandable. For example, the monitor which the Committee visited in Corstorphine was in a prominent position on St John's Road but had nothing to reflect either its use or readings.
149. The Committee is also wary of the positioning of vulnerable groups - such as young children and the elderly - near to known air quality hotspots. It was particularly interested in what the Greater London Authority was considering around primary schools in highly polluted areas.
150. The Committee recommends that the Scottish Government provide updated guidance on what types of non-automated air quality monitors can be used to provide sufficiently accurate data to compliment its automated equipment so that local authorities and national agencies can properly record and benchmark air quality much more widely than currently possible. This data should then be incorporated into the Scottish Government's air quality website.

cxii Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Cols 31-34.

151. The Committee recommends as a matter of urgency the Scottish Government review whether the current guidelines and regulations around the monitoring and tackling of Air Quality Management Areas is sufficiently robust to ensure that problems can be identified and rectified.
152. The Committee also considers the existing 95 automated monitoring stations to be a missed opportunity to raise awareness of air quality issues and encourage behaviour change. It calls on the Scottish Government to review how they might be publicised and also potentially provide live data to highlight pollution levels. This is currently done with speed cameras showing simple 'happy' or 'sad' faces based on the speed of a motorist - why not with air pollution?
153. Finally, the Committee recommends that the Government review any school located close to an Air Quality Management Area and whether additional mitigation should be in place near the school building or grounds. In addition, the planning of any new school or the updating of any existing facility must have the mitigation against poor air quality and harmful climate change emissions at its heart.

Other causes of air pollution

Agriculture

154. While the Committee received a limited amount of written evidence on air pollution stemming from agriculture, it took evidence from Professor Mark Sutton, an environmental physicist at the NERC Centre for Ecology and Hydrology. The Committee was particularly interested to learn both of new technologies being developed to help limit the amount of pollutants escaping into the atmosphere from agriculture and also techniques used in other countries.
155. In relation to other countries, the Committee heard of how farmers in Denmark and the Netherlands used different techniques to spread manure into, rather than onto, soil so that the pollutants were not so easily lost to the atmosphere. Both countries, said Professor Sutton, had also committed to storing manure in closed tanks and using technology to 'scrub' the air which comes buildings which store animals.
156. While acknowledging that some of these technologies require investment, Prof Sutton also highlighted the case of a farmer who stored manure in large slurry bags. The farmer noticed that the quality of the manure improved as a result of its storage "because it mobilised more inorganic nitrogen" which resulted in a greener crop. This has resulted in a reduction in the amount of fertiliser the farmer used and has consequently saved "thousands of pounds a year on their fertiliser bill".^{cxiii}
157. Stop Climate Chaos Scotland, in its written submission, called for farmers to use nitrogen fertiliser more efficiently. It also called for a 'Nitrogen Budget' to be established by 2020 which would "cut the overall amount of chemical fertiliser spread on Scotland's fields and promote recycling of biodegradable materials like food waste."^{cxiv}
158. The Cabinet Secretary for Environment, Climate Change and Land Reform acknowledged to the Committee that the Scottish Government is "aware that total annual ammonia emissions in Scotland are significantly impacted on by emissions from agriculture". The Cabinet Secretary added that, rather than stemming from cattle, these emissions are "mostly from the application of organic or inorganic manure to soils". The Minister for Transport and Islands added that there "is real collaboration" between Scottish Government ministers on climate change. The Scottish Government's Climate Change Plan, the Committee was told, would include these issues.^{cxv}

Conclusions

159. The Committee was encouraged to learn of the techniques used in other countries to limit the loss of nitrogen oxide into the atmosphere. While there are clearly

^{cxiii} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Cols 40-41.

^{cxiv} Stop Climate Chaos Scotland. Written submission.

^{cxv} Environment, Climate Change and Land Reform Committee. *Official Report, 5 December 2017*, Col 36.

financial costs involved in introducing such infrastructure, as the Cabinet Secretary noted, agricultural emissions make a significant impact to air quality.

160. The Committee was however disappointed to learn that there is very little information on agriculture emissions in the Cleaner Air for Scotland Strategy. Air quality is not just an urban issue and work needs to take place across the country to combat this problem. It nevertheless looks forward to reviewing the Climate Change Plan once published and considering the Scottish Government's proposed actions to reduce these emissions.

161. The Committee recommends that the Scottish Government updates the Cleaner Air for Scotland Strategy to include agricultural pollutants and how, and to what scale, it expects these to be reduced in the coming years. The Committee also recommends that the Scottish Government provide guidance to the agricultural sector on how to adopt such new techniques as well as consider what incentives might be offered to help accelerate the use of new methods.

Wood burning

162. The issue of wood burning stoves and commercial biomass boilers potentially contributing to poor air quality was originally raised with the Committee at its meeting with stakeholders on 2 May 2017. Dr Colin Ramsey, a Consultant Epidemiologist at Health Protection Scotland, said that they were "beginning to get concerned" about their contribution to air pollution. While noting that he did not want wood burning in homes and biomass boilers, such as in schools, to be exaggerated, Dr Ramsey noted that "we have to be aware that the dynamic is changing and have regard to how that affects the overall balance of sources of pollutants."^{cxvi}
163. At the same session, Vincent McNally, Environmental Health Officer at Glasgow City Council, also highlighted the potential impact of wood burning and biomass despite it having been promoted as a greener alternative. Mr McNally said that the biggest improvement to air quality in the UK had been the banning of coal and solid fuels and that we "might be undoing some of that through the promotion of wood burning and biomass in certain areas." While he couldn't quantify the problem in Scotland, Mr McNally suggested that "we do not have good enough controls."^{cxvii}
164. The Committee subsequently received a number of written submissions that focused on wood burning, primarily from a number of wood burning stove companies and organisations (Hi Flames Stoves, Stove Yard UK, Stove Industry Alliance, Charlton & Jenrick Ltd and HETAS Ltd/Woodsure). Each supported the increased roll-out of 'Ecodesign Ready' wood burning stoves, which will meet new EU standards coming into force in 2020. It was claimed by the Stove Industry Alliance that these stoves "can reduce particulate emissions (PM) by 90% compared to an open fire and 80% compared to a stove manufactured ten years

^{cxvi} Environment, Climate Change and Land Reform Committee. *Official Report, 2 May 2017*, Col 4.

^{cxvii} Environment, Climate Change and Land Reform Committee. *Official Report, 2 May 2017*, Cols 51-25.

- ago."^{cxviii} The groups each called for an incentive scheme to replace less efficient boilers with the newer designs.
165. Some of the submissions from the stove industry also said that emissions from stoves are exacerbated by 'wet wood'. HETAS Ltd/Woodsure said that "More regulatory control on the types and moisture contents being burned, as well as an increase in consumer awareness on the effects of quality fuel on emissions would go a long way as to improving air quality strategies."^{cxix}
166. Other evidence considered that there was a gap in the [Clean Air Act 1993](#) which allows the use of wood fired stoves to be unregulated. Indeed, the City of Edinburgh Council described the Act "outdated and does not deal effectively with emissions from smaller combustion process for example, wood burning stoves, biomass boilers (both domestic and commercial units)."^{cxx} David Duffy, Junior Vice President of the Royal Environmental Health Institute of Scotland, believed that there was a gap between building regulations and planning requirements against advice from environmental health departments.^{cxxi} Other witnesses highlighted the lack of data on the impact of wood burning to overall emissions so it was difficult to quantify the extent of the problem.
167. The Cabinet Secretary for Environment, Climate Change and Land Reform acknowledged that because of permitted development rights local authorities cannot accurately assess the number of wood burning stoves in their areas and so are unable to assess their impact. While pointing out the higher emission standards of modern stoves and boilers, Ms Cunningham also recognised that the 1993 Clean Air Act might need to be updated.

Conclusions

168. The Committee welcomed the evidence on wood burning stoves and biomass boilers but, due to the lack of available data, is unable to establish whether they are a serious contributing factor to harmful pollutants. However, it believes that this is an area which needs to be explored so that evidence based decisions can be made in the future.
169. The Committee also considers there is a gap in regulations around the installation of wood burning stoves, with conflicting guidance coming from environmental health department officials, planning regulations and building standards. The Committee considers there are benefits in harmonising these approaches. The Committee notes the Cleaner Air for Scotland strategy will "consider aligning planning guidance on air quality with the requirements of CAFS and review evidence for the positive and negative effects of permitted development rights for domestic biomass flues."^{cxxii} The Committee is nevertheless unsure when this work will be undertaken

^{cxviii} The Stove Industry Alliance. Written Submission.

^{cxix} HETAS Ltd/Woodsure. Written submission.

^{cxx} The City of Edinburgh Council. Written submission.

^{cxxi} Environment, Climate Change and Land Reform Committee. *Official Report, 14 November 2017*, Col 11.

^{cxxii} Scottish Government (2015) [Cleaner Air for Scotland: The Road to a Healthier Future](#).

170. The Committee recommends that the Scottish Government undertake research to understand the extent of pollutants emanating from wood burning stoves and biomass boilers, which are regulated differently, so that informed decisions can be made on whether any harmful impact needs to be mitigated.

171. The Committee also recommends that the Scottish Government review the current regulations and guidance on the installation of wood burning and multi fuel stoves and boilers in homes to ensure that air pollution from wood burning and multi-fuel stoves is sufficiently considered and appropriately regulated.

Overall findings

172. This report has sought to address the questions it asked at the beginning of the inquiry. A summary of the Committees' view is set out below.

Whether Scotland has the right policies (Clean Air for Scotland Strategy), support and incentives in place to adequately tackle air pollution?

The Committee considers that the policies contained within CAFS are broadly moving in the right direction. However, the Committee questions whether the necessary support and incentives are in place to deliver action on the ground.

Are the policies sufficiently ambitious?

Generally, the Committee considers the policies to be sufficiently ambitious. It is more concerned with how these policies will be delivered, by whom and when.

Are the policies and delivery mechanisms (support and incentives) being effectively implemented and successful in addressing the issues?

The Committee does not believe that the 2016 Progress Report on CAFS was as clear and transparent as should have been. As highlighted earlier, future reports must ensure the status of the delivery of each individual action and take into account new policies and resources.

Are there conflicts in policies or barriers to successful delivery of the air quality objectives?

Yes. These are varied across each sector and details are provided in the report.

How Scottish policy fits with the UK and EU policy on air quality?

In the main, the Committee is satisfied that Scottish policy fits in with the wider UK and EU policies on air quality. Questions were nevertheless raised about the Scottish Government's ability to meet with the EU air quality targets for 2020.

Are the powers and resources of local authorities and SEPA to address air pollution adequate?

There are clearly resourcing issues at local government level and within SEPA. The Committee is also unclear as to the distinction between their work, the effectiveness of their action and interaction and whether their powers are adequate.

Is Scotland on target to have a pilot low emission zone (LEZ) in place by 2018 and should there be more than one LEZ pilot?

The Committee has some concerns over the tight timescale around the introduction of LEZs and whether the relevant local authorities have the necessary resources - both technical and financial - for them to be fully operational.

How should the improvement of air quality be prioritised in areas where there have been persistent breaches of NO2 limit values?

The Committee received a variety of evidence on how this might be done but, other than the proposed LEZs, how this is to be done is not specified.

Is adequate consideration given to air pollution from agriculture?

No. The body of the report recommends that CAFS includes agricultural pollutants and how, and to what scale, it expects these to be reduced in the coming years.

Annexe A - Minutes of Meetings

6th Meeting, 2018 (Session 5) Tuesday 20 February 2018

3. Air quality in Scotland (in private): The Committee considered a draft report. Various changes were agreed to. The Committee delegated to the Convener responsibility for finalising the draft report for publication.

31st Meeting, 2017 (Session 5) Tuesday 5 December 2017

2. Air quality in Scotland: The Committee took evidence from—

- Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform,
- Humza Yousaf, Minister for Transport and the Islands,
- Neil Ritchie, Branch Head of Environmental Quality Division,
- Andrew Taylor, Air Quality Policy Manager, Scottish Government;
- Yvette Sheppard, Environment and Sustainability Manager, Transport Scotland.

Claudia Beamish declared an interest as co-convener of the Cross-Party Group in the Scottish Parliament on Cycling, Walking and Buses.

3. Air quality in Scotland (in private): The Committee considered evidence heard earlier in the meeting.

28th Meeting, 2017 (Session 5) Tuesday 14 November 2017

2. Air quality in Scotland: The Committee took evidence from—

- David Duffy, Junior Vice President, Royal Environmental Health Institute of Scotland;
- Dr Scott Hamilton, Principal Air Quality Consultant, Ricardo Energy & Environment;
- Vincent McNally, Environmental Health Officer, Sustainable Glasgow, Glasgow City Council;
- Dennis Milligan, Head of Communications, Stove Industry Alliance;
- Professor Mark Sutton, Environmental Physicist, NERC Centre of Ecology & Hydrology.

John Scott declared an interest as a farmer. Emma Harper declared an interest as a registered nurse. Graeme Dey and Richard Lyle declared an interest as diesel car owners.

5. Air quality in Scotland (in private): The Committee considered evidence heard earlier in the meeting. The Committee agreed to write to the Greater London Authority and to seek to meet with the Mayor of London.

27th Meeting, 2017 (Session 5) Tuesday 7 November 2017

2. Air quality in Scotland: The Committee took evidence from—

- Chris MacRae, Head of Policy, Freight Transport Association;
- Phil Matthews, Chair, Transform Scotland;
- Alex Quayle, Senior Policy Officer, Sustrans;
- Paul White, Director of Government Relations, Confederation of Passenger Transport UK.

3. Air quality in Scotland (in private): The Committee considered evidence heard earlier in the meeting.

26th Meeting, 2017 (Session 5) Tuesday 31 October 2017

8. Air quality in Scotland: The Committee took evidence from—

- Graham Applegate, Principal Policy Officer for Air Quality, Scottish Environment Protection Agency;
- Craig McLaren, Director, Royal Town Planning Institute Scotland;
- Stephen Thomson, Head of Environment & Sustainability, Transport Scotland.

9. Air quality in Scotland: The Committee considered evidence heard earlier in the meeting.

24th Meeting, 2017 (Session 5) Tuesday 26 September 2017

6. Air quality in Scotland (in private): The Committee agreed its approach to the next phase of the inquiry.

17th Meeting, 2017 (Session 5) Tuesday 6 June 2017

5. Work programme (in private): The Committee considered its work programme and this will be published on the Committee's website in due course.

13th Meeting, 2017 (Session 5) Tuesday 2 May 2017

3. Air quality in Scotland: The Committee took evidence from—

- Professor David Newby, Edinburgh Clinical Research Facility, University of Edinburgh;
- Fintan Hurley, Scientific Director, Institute of Occupational Medicine;
- George Curley, Director of Operations and Facilities, NHS Lothian;
- Dr Colin Ramsay, Consultant Epidemiologist, Health Protection Scotland;
- Janice Milne, Head of National Regulatory Services, Scottish Environment Protection Agency;
- Emilia Hanna, Air Pollution Campaigner, Friends of the Earth Scotland;

- Vincent McNally, Environmental Health Officer, Sustainable Glasgow, Glasgow City Council;
- Will Garrett, Spatial Policy Manager, Planning & Transport, The City of Edinburgh Council;
- Tom Rye, Professor of Transport and Director of Transport Research Institute, Napier University;
- Professor Bob Rees, Head of the Carbon Management Centre, Scotland's Rural College;
- Craig McLaren, Director of Scotland and Ireland, Royal Town Planning Institute;
- Anna Heslop, Lawyer, Clean Air - Strategic Litigation, Client Earth.

4. Air quality in Scotland (in private): The Committee considered evidence heard previously in the meeting.

Annexe B

Written evidence

The Committee received the following written submissions on the inquiry—

- 001 S Housego
- 002 Graeme Cobb
- 003 Brian Griffiths
- 004 McGill's Bus Service Ltd
- 005 Selkirk Regeneration Company
- 006 Transform Scotland
- 007 Liz Albert
- 008 Andreas Wernsing
- 009 First Group plc UK Bus Division
- 010 Stove Industry Alliance
- 011 Charlton & Jenrick Ltd
- 012 Stove Yard UK Limited
- 013 West Lothian Council
- 014 Royal College of Physicians
- 015 Spokes Planning Group
- 016 Johnston Orr
- 017 Mic Starbuck
- 018 British Heart Foundation
- 019 North Ayrshire Council
- 020 Freight Transport Association
- 021 Path for All
- 022 UNISON
- 023 British Lung Foundation Scotland
- 024 Scottish Environment Protection Agency

- [025 Cycling UK](#)
- [026 Calor](#)
- [027 Moira Andrew](#)
- 028 NOT PUBLISHED
- [029 ClimateXChange Institute for Transport Studies Leeds University](#)
- [030 Doosan Babcock](#)
- [031 Sustrans Scotland](#)
- [032 Mineral Products Association Scotland](#)
- [033 Corstorphine Community Council](#)
- [034 Lothian Buses Ltd](#)
- [035 Stop Climate Chaos](#)
- [036 Friends of the Earth Scotland](#)
- [037 Scottish Hydrogen and Fuel Cell Association](#)
- [038 Confederation of Passenger Transport UK](#)
- [039 HETAS Ltd](#) [040 Ricardo Energy and Environment](#)
- [041 Barry Watson](#)
- [042 Hi Flames Stoves](#)
- [043 Aberdeen City Council](#)
- [044 Strathclyde Partnership for Transport](#)
- [045 Cycling Scotland](#)
- [046 Royal Town Planning Institute Scotland](#)
- [047 Linlithgow Town Centre Business Improvement District](#)
- [048 Stirling Council](#)
- [049 City of Edinburgh Council](#)
- [050 Road Haulage Association Ltd](#)
- [051 NERC Centre for Ecology & Hydrology](#)
- [052 The Royal Environment Health Institute of Scotland](#)

Official reports

- [Tuesday 5 December 2017](#) - Evidence from Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform, Minister for Transport and the Islands, Humza Yousaf and Officials
- [Tuesday 14 November 2017](#) - Evidence from stakeholders
- [Tuesday 7 November 2017](#) - Evidence from stakeholders
- [Tuesday 31 October 2017](#) - Evidence from stakeholders
- [Tuesday 2 May 2017](#) - Evidence from stakeholders

