

Environmental Standards Scotland air quality investigation - Scottish Government improvement plan

March 2023

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Background

In November 2021 Environmental Standards Scotland (ESS) announced that its first investigation would consider air quality, specifically focusing on compliance with the nitrogen dioxide limit value set in Directive 2008/50/EC on ambient air quality and cleaner air for Europe, which forms part of retained law following the UK's exit from the European Union. After taking evidence from the Scottish Government, the Scottish Environment Protection Agency (SEPA) and local authorities, ESS published its conclusions and recommendations in the form of an improvement report in September 2022.

This improvement plan sets out the Scottish Government's response to the six key recommendations made by ESS in the improvement report.

Introduction

Both concentrations and emissions of the main air pollutants in Scotland have declined significantly over the last three decades. This has been achieved through tighter regulation, improved fuel quality, cleaner vehicles and an increased focus on sustainable transport. Between 2005 and 2020 (the latest year for which figures are available), nitrogen oxide emissions have decreased by 61%, fine particulate matter (PM) by 52% and sulphur dioxide by 92%.

Excluding data from 2020 and 2021 (which are not representative of long term trends due to the impact of the Covid-19 pandemic), pollution levels across the Scottish monitoring network of c.100 sites continue to decrease year on year. Provisional air quality monitoring data, which at the time of writing were still to be ratified, indicate that for the first time, outside of recent lockdown periods, there are no monitoring sites in Scotland exceeding air quality objectives.

At the same time, hotspots of poorer air quality remain in some of our urban centres, linked closely to transport emissions. In addition, as our knowledge about the effects of air pollution on human health continues to develop, it is becoming increasingly clear that even low pollutant concentrations can impact a wide range of both short and long term health conditions. And as we continue to make progress on transport, other pollution sources, such as domestic fuel combustion and agriculture, will require greater attention.

Taking all of this into account, it is vitally important that we build on successes to date and take continued action to drive down pollution levels still further. The Scottish Government's Cleaner Air for Scotland 2 strategy¹ (CAFS2) sets out the policy framework for air quality in Scotland to 2026 and includes a comprehensive list of actions across a range of policy areas.

¹ [Cleaner Air for Scotland 2](#)

The Government welcomes ESS's air quality investigation and improvement report as a positive contribution to this process. We have worked closely and constructively with ESS during the course of this work, and we are committed to delivering on the six key recommendations made in the improvement report. This improvement plan sets out how we intend to do this. The plan is split into two sections, the first section covering the three recommendations relating to local authority roles and responsibilities in relation to air quality, and the second covering the remaining recommendations relating to monitoring. The improvement report requires the first four recommendations to be included in an improvement plan. Under section 30 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021, an improvement plan must be laid before the Scottish Parliament. ESS has made the remaining two recommendations to the Scottish Government under its power to make recommendations in relation to any matter relevant to its functions, but has not required for these to be included in the improvement plan. However all six recommendations are covered here for completeness and to allow a wider, more strategic approach to be taken in responding to them.

Local authority roles and responsibilities in relation to air quality

Under the Environment Act 1995 and associated regulations, all local authorities are required to regularly review and assess air quality in their areas against objectives for several pollutants of particular concern for human health, through the Local Air Quality Management (LAQM) system. If this assessment indicates that any objective is not being achieved, the authority concerned must declare an Air Quality Management Area (AQMA) and produce an air quality action plan (AQAP) setting out how it intends to achieve the objectives. Additionally, all authorities are required to submit an annual progress report to the Scottish Government and SEPA summarising their monitoring and other air quality related work over the previous year. The three recommendations made by ESS to strengthen the LAQM process are:

- Introduce the requirement for local authorities to complete and publish AQAPs within a specified target date following the introduction of an AQMA, which must be within as short a time as possible;
- Introduce the requirement for local authorities to achieve AQMA and AQAP objectives within a specified target date, which must be within as short a time as possible; and
- Introduce the requirement for local authorities to review and, where necessary, update AQAPs. The targets for any such review and update must be consistent with the principle of as short a time as possible.

Delivery of these three recommendations will help to improve action plan implementation by setting out a more streamlined and standardised delivery process, whilst at the same time providing greater clarity and guidance to local authorities on their roles and responsibilities.

One of the actions in CAFS2 is to undertake a review of the LAQM system. To support and inform that review, a short life working group was established in October

2022, including officials from the Scottish Government, SEPA and a representative selection of local authorities.

The working group broadly endorsed the responses to the three recommendations set out below, which were then put out to wider consultation via the Scottish Pollution Co-ordinating Control Committee (SPCCC), a forum through which local authorities come together to discuss and exchange view on environmental health matters². The policy guidance, which the Scottish Government produces to assist authorities in undertaking their LAQM duties (as referred to under recommendation 1 below), will be updated to reflect all of these changes and published by March 2023.

Recommendation 1 - Introduce the requirement for local authorities to complete and publish AQAPs within a specified target date following the declaration of an AQMA, which must be within as short a time as possible.

Scottish Government response – accept recommendation.

The Environment Act 1995, which sets out the requirements for local authority air quality review and assessment, does not prescribe any timescales for preparing an AQAP. However the Scottish Government’s LAQM policy guidance, produced to assist local authorities in undertaking their statutory duties, states that AQAPs are expected to be completed within 12 months of an AQMA being designated.

The policy guidance will be updated with a more clearly defined requirement for AQAPs to be published within as short a time as possible and no later than 12 months from AQMA designation.

As internal approval processes vary between local authorities, the shortest possible time to produce and publish an AQAP will be determined on a case by case basis. The policy guidance will set out what a local authority must include in an AQAP as well as the statutory consultation requirements. These factors, alongside a local authority’s internal approval process, will be taken into account by SEPA and the Scottish Government in agreeing the shortest possible time to develop and publish plans with individual local authorities.

Recommendation 2 - Introduce the requirement for local authorities to achieve AQMA and AQAP objectives within a specified target date, which must be within as short a time as possible.

Scottish Government response – accept recommendation.

The LAQM policy guidance referred to in the response to recommendation 1 sets out what should be included in an AQAP, including implementation timescales for measures, quantification of expected impacts of measures and assessment of whether measures will be sufficient to meet objectives.

² The SPCCC has also endorsed the recommendations.

As part of the wider LAQM review referred to under recommendation 1, the short life working group has concluded that the policy guidance should be strengthened to require:

- Specified target dates for completing each action plan measure;
- Well defined milestones towards completion; and
- A clearer requirement for assessing (where feasible, given that some measures will be qualitative by nature) the estimated reduction in pollutant concentrations contributed by each AQAP measure.

The revised policy guidance will also confirm that AQAP measures should be delivered within as short a time as possible, and that the action plan itself should have a timescale for completion and for revocation of the AQMA. The timescale for revocation should be 'within as short a time as possible' which should be taken to mean the date by which the longest term AQAP measure is expected to be completed. This will be agreed with individual local authorities on a case by case basis, taking into account their specific circumstances.

Finally, the revised guidance will include more explicit requirements for joint working with Transport Scotland and SEPA on actions which lie outside direct local authority control, for example where exceedences of objectives relate to the trunk road network or SEPA controlled processes, and with neighbouring authorities on actions which have cross boundary implications. The present guidance simply recommends that such joint working should take place, but the revised guidance will introduce an expectation that this should happen as a matter of course and sets out standardised advice on how it will work in practice.

Recommendation 3 - Introduce the requirement for local authorities to review and, where necessary, update AQAPs. The targets for any such review and update must be consistent with the principle of as short a time as possible.

Scottish Government response – accept recommendation.

The Environment Act 1995 requires action plans to be revised 'from time to time'. The short life working group established to support the wider review of LAQM referred to under previous recommendations has agreed that this requirement should be more clearly defined. Therefore revised LAQM policy guidance will specify that current AQAPs should be reviewed and, where necessary, updated within one year of the revised guidance being published, and every five years subsequently.

It is important to strike a balance between review and implementation. Too short a cycle and efforts will be skewed towards review and updating, rather than taking action, which the Scottish Government does not consider to be most effective use of resources nor conducive to further improving air quality. A five year cycle is considered appropriate as it is consistent with the lifespans of the Government's Cleaner Air for Scotland strategies. At the same time, we would expect many of the measures to be completed within the five year period, and it will be made clear in guidance that timescales for individual measures should be as short as possible. If circumstances change significantly within the AQMA, this will trigger an automatic

review of the action plan for appropriateness, to ensure that measures remain sufficient to achieve compliance within as short a time as possible.

Monitoring

A comprehensive monitoring network is essential for producing high quality data to inform both central and local government policy development, to aid research and to allow assessment of progress in reducing air pollution. Approaches to monitoring must be regularly reviewed to ensure that technological and analytical developments are being capitalised on, and also so that monitoring locations remain relevant for identifying areas of most concern.

Recommendation 4 - Identify or introduce a monitoring body with the remit to look at the system of air quality monitoring and compliance holistically (including the monitoring of the implementation and effectiveness of Low Emission Zones (LEZs)). It is critical that this body should be able to move quickly where air quality does not meet legal requirements, consistent with the principle of achieving compliance within the shortest time possible, and thus it should have the requisite power to direct action when deemed necessary.

Scottish Government response – accept recommendation.

Under section 85 of the Environment Act 1995 SEPA has wide-ranging powers to direct a local authority to take appropriate steps should that authority not be properly undertaking its statutory duties in relation to air quality. Such a direction can cover, amongst other things, review and assessment of air quality, declaration of an AQMA or preparation or modification of an AQAP.

The Scottish Government considers that the requirements of this recommendation can be satisfied by setting out more explicitly in the revised guidance referred to above the powers available to SEPA. In particular the guidance will be strengthened to include an assumption that the powers should be used routinely once the series of warning levels issued to local authorities when specified deadlines are missed have been exhausted (see table below), rather than on a case by case basis as at present.

Timescale	Month *	Enforcement level
Report two months overdue	August	Reminder
Report three months overdue	September	Warning letter
Report four months overdue	October	Final warning letter
Report six months overdue	December	Section 85 direction

*or agreed revised deadline

SEPA will work, as far as possible, with local authorities to ensure the requirements of the Environment Act 1995, and the associated guidance, are fulfilled satisfactorily.

Where a local authority is not fulfilling their duties under the Act, SEPA, in dialogue with the Scottish Government, will initiate the enforcement procedure outlined in the revised policy guidance in all cases.

In most cases SEPA anticipate that a resolution can be achieved before the final enforcement stage is reached, however SEPA will approach the Scottish Government to use its reserve powers on every occasion where the other levels of enforcement have failed to satisfactorily resolve the issue of non-compliance. Throughout this escalation process SEPA will provide a local authority with every opportunity to comply prior to issuing a direction and will remain in dialogue and provide support to the local authority.

In relation to LEZs, sections 29, 30 and 31 of the Transport (Scotland) Act 2019 address monitoring the implementation and effectiveness. This is covered in more detail in section 11 of the LEZ guidance³. A local authority which is operating a LEZ must prepare an annual report on the operation and effectiveness of that scheme, as soon as practicable after the end of the financial year. A copy of the annual report, as a minimum, must be sent to Scottish Ministers, and must be laid before the Scottish Parliament. A local authority will also publish their annual report in such a manner as it considers appropriate. In addition to annual reporting, the Scottish Ministers can mandate a local authority to undertake a review of the operation and effectiveness of a LEZ at any time. After a review has been undertaken, the Scottish Ministers can direct a local authority to take specific action where LEZ performance is in question.

Other recommendations

ESS included in its report a further two recommendations which are not intended to be a formal part of the improvement plan, but which are included here for completeness.

Recommendation 5 - That the Scottish Government ensures that its ongoing review of data provision scrutinises the protocols for the siting of monitoring sites, with a view to establishing whether they provide a sufficiently comprehensive picture of the state of air quality, particularly in and around our major cities. Specific focus should be placed on areas where vulnerable groups are present, such as schools and hospitals.

Scottish Government response – accept recommendation.

An action in CAFS2 is for the Scottish Government, with support from SEPA, to commission a review of air quality data collection and reporting in Scotland. SEPA has compiled a spreadsheet of local authority monitoring locations for LAQM purposes. This includes the c.100 automatic monitoring sites and c. 1100 diffusion tube monitoring locations, and whether the site has recorded exceedances of the air quality objectives within the last five years. SEPA has also reviewed current guidance on monitoring and concluded that this remains fit for purpose.

³ [Low Emission Zone Guidance \(transport.gov.scot\)](https://www.transport.gov.scot)

The Scottish Government, jointly with the other UK administrations, provides comprehensive technical guidance for local authorities to support them in undertaking all aspects of LAQM work. The guidance was most recently updated in August 2022 (TG.22)⁴. Automatic air quality monitors are complex instruments and costly to purchase, operate and maintain. This places a practical limit on the number of locations that can be monitored in this way. It is therefore important that resources are put to the best possible use by ensuring that monitors are optimally located to accurately represent both public exposure and air quality at background locations for comparison.

For this reason, comprehensive screening tools have been developed as part of the technical guidance to help local authorities identify the most appropriate monitoring sites, together with detailed models for estimating pollution levels at locations where automatic monitoring is not possible. In addition, nitrogen dioxide diffusion tubes provide a low cost screening approach which can be easily deployed widely, highlighting areas which may merit more detailed investigation. In recent years there has been significant development of a wide range of cheaper and flexible monitoring technologies covering all the main air pollutants. This sector will continue to expand and improve, with increasing potential to support and enhance the more established monitoring approaches.

Over the years that LAQM has been in place, local authorities have progressively adapted their monitoring strategies in accordance with the specific air quality issues in their areas. Monitoring networks have been extended to cover all potential hotspots, whilst sites are relocated to more relevant areas where necessary or discontinued where compliance has been secured.

Air pollution hotspots will generally be where high levels of traffic coincide with locations where large numbers of people are regularly present. The monitoring network and the supporting methodologies are sufficiently robust to ensure that any areas of concern will be picked up, including those locations where vulnerable groups are present, such as schools and hospitals.

Although these latter locations are in general less likely to experience poor overall air quality, vehicle idling outside schools can be a significant local issue, especially at drop off and pick up times. The Road Traffic (Vehicle Emissions) (Fixed Penalty) (Scotland) Regulations 2003 provide powers for local authorities to issue a fixed penalty notice to drivers of parked idling vehicles who refuse a reasonable request to switch off their engines. Use of the powers is voluntary and it is for individual local authorities to decide whether to make use of them, taking into account their specific air quality issues. The Scottish Government provides guidance and financial support to authorities for this purpose. In 2022/23, 17 local authorities were making use of the powers, with many of these focusing on schools and also conducting education and awareness raising campaigns around the impacts of idling on local air quality.

In addition, SEPA has been closely engaged in educational and citizen science initiatives on air quality with schools and more widely, including the Learn About Air

⁴ [LAQM-TG22-August-22-v1.0.pdf \(defra.gov.uk\)](#)

programme⁵, a package of teaching materials aimed at primary and secondary schools, along with Clean Air Day activities. SEPA were early pioneers in the use of low cost air quality sensors to help facilitate this work, helping schools and local authorities to build the case for restricting vehicles around school gates and promoting active travel.

Recommendation 6 - That the Scottish Government revises CAFS2 to include specific and measurable timescales (consistent with the overarching duty to achieve compliance within the shortest time possible) for when compliance with nitrogen dioxide limit values should be achieved.

Scottish Government response – accept recommendation

Currently, the actions set out in the CAFS2 Delivery Plan have been assigned either short (to be completed by the end of 2022), medium (to be completed by the end of 2024) or long term (to be completed by the end of 2026) status. Further detail has been added to the broad categories to allow a more detailed assessment of progress to be made. All of the non completed actions have been reassessed to assign defined milestones, which in most cases are annual, and a specific date by which the action will be completed. Progress will be reviewed annually and milestone/completion dates adjusted as necessary.

Under the Ambient Air Quality Directive 2008/50/EC, limit values have been set for several air pollutants of particular concern for human health and dates by when these should be achieved. The Directive was transposed by the Air Quality Standards (Scotland) Regulations 2010, which are part of retained EU law following EU exit.

Scotland is fully compliant with all the limit values apart from non compliance for nitrogen dioxide at six locations – three in North Lanarkshire, two in Glasgow and one in Edinburgh. The most recently available assessment projections estimated that all of these bar one of the North Lanarkshire locations would be compliant by the end of 2022, with that location following by 2023. Compliance projections are calculated based on a combination of data from the UK wide air quality monitoring network operated jointly by the four UK Governments, and modelling using the UK Pollution Climate Mapping models.

Differences between EU air quality assessment and Local Air Quality Management

- There are two legislative and policy frameworks for ambient air quality in Scotland (and the rest of the UK) – the Ambient Air Quality Directive 2008/50/EC, which form part of retained EU law following the UK's exit from the European Union, and the Local Air Quality Management (LAQM) system, set out in the Environment Act 1995, at domestic level.

⁵ [LearnAboutAir.com](https://www.learnaboutair.com) :: [Learning about Air Quality](https://www.learnaboutair.com)

- When comparing air quality under the EU Directive and LAQM, it is important to remember that the two sets of legislation have different assessment requirements. This makes direct comparison difficult.
- Each system has slightly different requirements in terms of air quality assessment. This creates a situation where Scotland is predicted to be largely compliant with Directive requirements by 2023, yet there are still 34 Air AQMAs (at the time of writing) in place under LAQM.
- Under the Air Quality Directive, assessment is undertaken mainly through modelling, cross checked against a small number of monitoring stations in the UK monitoring network. Because of the complexity of the model used for this purpose, only motorways and A roads are modelled. This produces a high level overview of the air quality situation.
- The assessment methodology under the Directive requires assessment anywhere that members of the public have access, not necessarily where there is relevant public exposure to pollutants. There are also clearly defined criteria which must be followed in relation to numbers and locations of monitoring sites.
- LAQM is based more on monitoring data, supplemented by modelling. Under LAQM all roads are assessed, not just motorways and A roads. This approach is designed to identify local hotspots and produces a much more detailed picture of air quality. There is also more flexibility in the siting criteria for LAQM monitoring sites to ensure that all areas of concern can be covered. Unlike the EU Directive, LAQM assessment is only required at locations where members of the public are regularly present.

Conclusion

The Scottish Government, in partnership with SEPA and local authorities, will proceed to implementing these six recommendations as outlined above, as part of the wider delivery of actions set out in the CAFS2 strategy.



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