



Welcome to the 14<sup>th</sup> Scottish Air Quality Database (SAQD) stakeholder’s newsletter. This newsletter is produced on behalf of the Scottish Government by Ricardo Energy & Environment (Ricardo) and is designed to provide regular updates and news regarding the SAQD and local air quality matters to all stakeholders. This may include; updates to the network; new information on air quality issues; updates on changes in policy and procedures; new initiatives and events; technical reports; and how to access data using the Air Quality in Scotland website.

If you have any information which you think would be beneficial to include in a future newsletter, please email us at [aq-monitoring-scotland@ricardo.com](mailto:aq-monitoring-scotland@ricardo.com).

## NEWS

### 2022 ANNUAL PROGRESS REPORTS (APR) AND 2021 DIFFUSION TUBE DATA

As 2022 LAQM APRs approvals begin to filter through and in turn published, please can you send through the reports to be uploaded to the Air Quality Scotland Website? If you have any other historical LAQM documents missing from the website (<https://www.scottishairquality.scot/lagm/lagm-reportsplease>) please send them through as well.

Once your APR is published can you also send through your diffusion tube data (as done previously) for 2021 to be included in the Air Quality in Scotland NO<sub>2</sub> diffusion tube map <https://www.scottishairquality.scot/latest>.

As previously, please use the two Excel templates (“Scottish NO<sub>2</sub> Site” and “NO<sub>2</sub> annual mean data”) provided in the email from David Hector on 29<sup>th</sup> July 2022 to send through your data.

Alternatively, you can use previously populated templates and add the 2021 annual mean data. If you have added new sites in 2021 please include the new meta data and annual mean concentrations in both templates. If you have any queries please do not hesitate in contacting David Hector.

## ABERDEEN LOW EMISSION ZONE (LEZ)

WRITTEN BY ABERDEEN CITY COUNCIL

In May 2022, Aberdeen City Council (ACC) declared a Low Emission Zone (LEZ) in the City Centre. This is an area where the driving of vehicles which do not meet specified emissions standards is prohibited. The aim is to improve air quality within the City Centre Air Quality Management Area (AQMA) to ensure compliance with the Scottish Government’s air quality objectives, particularly for nitrogen dioxide (NO<sub>2</sub>).



FIGURE 1. MAP OF ABERDEEN LEZ

A 2-year grace period has now commenced, with full enforcement taking place from June 2024.

The LEZ has been introduced in response to longstanding issues of poor air quality in the City Centre. Air pollution is a contributing factor to many health problems, and the number of conditions linked to poor air quality grows every day. This has a disproportionate impact on the

most vulnerable, particularly the young, elderly and those with chronic heart, lung and respiratory conditions.

Although pollution has improved in Aberdeen in recent years, many areas still see regular exceedance or near exceedance of the NO<sub>2</sub> objective. Road traffic is the main source of pollution.

As well as the health benefits, there are wider benefits to improving air quality, in terms of making Aberdeen and the City Centre clean and welcoming environments for living, working, shopping and leisure. The LEZ will also support post-Covid economic recovery and city centre regeneration.

The LEZ has been subject to a robust assessment process, including public and stakeholder engagement, a formal objection period, traffic modelling, and emissions analysis.

<https://www.aberdeencity.gov.uk/services/roads-transport-and-parking/low-emission-zone>.

**CONTACT:** Ann Marie Rankin, Principal Environmental Health Officer, Aberdeen City Council

#### [CLEANER AIR FOR SCOTLAND 2 \(CAFS2\) PROGRESS REPORT, JUNE 2022](#)

This is the first annual progress report for Scotland's new air quality strategy 'Cleaner Air for Scotland 2 – Towards a Better Place for Everyone' which was published in the summer of 2021. The past year has seen the Scottish Government, working closely with their partners, beginning to build on the achievements of the previous Cleaner Air for Scotland strategy and setting the course for further air quality improvements over the next five years.

To view the full report, please click [here](#), for more information on CAFS2 strategy, please visit the [CAFS & LEZ](#) page on the Air Quality in Scotland website.

## CLEAN AIR DAY – THURSDAY 16TH JUNE 2022

WRITTEN BY EPS



CLEAN AIR DAY, coordinated by Environmental Protection Scotland (EPS), took place across Scotland on 16<sup>th</sup> June – with people, schools and communities from Na h-Eileanan Siar to South Ayrshire taking part in activities to raise awareness of the actions we can all take to cut air pollution.

This year's campaign was once again funded by the Scottish Government, which last year launched the 'Cleaner Air For Scotland 2' (CAFS) strategy.

Schools on Eileanan Siar were among almost 190 participating organisations thanks to new Gaelic-language schools toolkits that encouraged people to cycle, walk or use public transport in place of the car, especially for short trips.

Tong Primary School and the Sir E Scott School on the Isle of Lewis and the Sgoil an Iochdar Primary School on South Uist gave away Clean Air Day colouring-in books to pupils who took part in classroom learning about air quality.

First Glasgow parked an electric bus for pupils to clamber aboard outside St Joseph's Primary School and Glasgow City Council's Convener for Climate, Glasgow Green Deal, Transport and City Centre Recovery, Councillor Angus Millar, met the pupils. Environmental Protection Scotland Policy Officer John Bynorth took a Renault Zoe

EV into the playground of St Monica's Primary School in Pollok, Glasgow.



FIGURE 2. FIRST GLASGOW'S ELECTRIC BUS OUTSIDE OF ST JOSEPH'S PRIMARY SCHOOL

Ricardo delivered air quality presentations and learning experiences for pupils at Balhousie Primary School, St Ninians Primary School, Craigie Primary School and Perth Academy, all in Perth. Pupils were thrilled to make 'clean air' poster, banned and enjoyed a treasure hunt to find air quality monitors and diffusion tubes in the city centre.

Pupils studying environmental science at Perth Academy will gain a greater understanding of air quality over the next year, thanks to the installation of a Bosch IMB monitor in the grounds.

Ricardo installed an air quality monitor on top of the bike shed near the car park at Carnegie Primary School in Dunfermline. School staff printed off no idling leaflets as part of a drive to encourage people to switch off their engines when attending the school by vehicle.

Thanks to everyone who helped made the campaign such a success!

**CONTACT:** John Bynorth, Policy and Communication Officer, EPS

## SCOTTISH ENVIRONMENT PROTECTION AGENCY (SEPA)

WRITTEN BY SEPA

During 2022, SEPA commissioned Glasgow Science Centre to develop and deliver an eight-week learning programme for P5 – P7 pupils to raise awareness of air pollution and some of the steps we all can take to have a positive impact on air quality.

The Learning Lab programme called "Our Amazing Air" includes a variety of materials and support for teachers including teacher training sessions, detailed lesson plans with Curriculum for Excellence (CfE) experiences and outcomes, pupil worksheets, video content, family learning activities, question and answer sessions with professionals in the field and a visit to Glasgow Science Centre.

The first round of teaching commenced during May and June 2022 with 54 teachers delivering the programme for 1284 pupils from 26 schools across Scotland. Teachers and pupils found the teaching materials and learning experience to be very informative, enjoyable with a high level of engagement and interest. Feedback included:

*"These resources made teaching STEM much easier, and all children thoroughly enjoyed exploring each module."*

*"The programme linked to Clean Air Day which our school is enthusiastically participating in."*



FIGURE 3. PUPILS FROM ST DENIS PRIMARY SCHOOL IN GLASGOW MAKING THEIR AIR POLLUTION CATCHERS DESIGNED TO MEASURE PARTICULATE MATTER IN THE AIR AT THEIR SCHOOL.

Work is already underway to develop the next version of the programme and the start date for *Our Amazing Air* next academic year is scheduled for 20 April 2023 – with a CLPL session at 1600. For more information on the teaching programme, its content and how to register for a place, visit: <https://www.glasgowsciencecentre.org/take-part-in-learning-lab>

SEPA is also continuing to run its free-to-use air quality school banner competition (for more information contact [colin.gillespie@sepa.org.uk](mailto:colin.gillespie@sepa.org.uk)) and the free on-line air pollution teaching package ([www.learnaboutair.com](http://www.learnaboutair.com)) also remains available.

CONTACT: Graham Applegate

### JULY 2022 MODERATE AIR POLLUTION EPISODE

Between 18<sup>th</sup> July and 20<sup>th</sup> July 2022, Ozone (O<sub>3</sub>) concentrations were elevated throughout Scotland, reaching Moderate on the [Daily Air Quality Index](#) (DAQI).

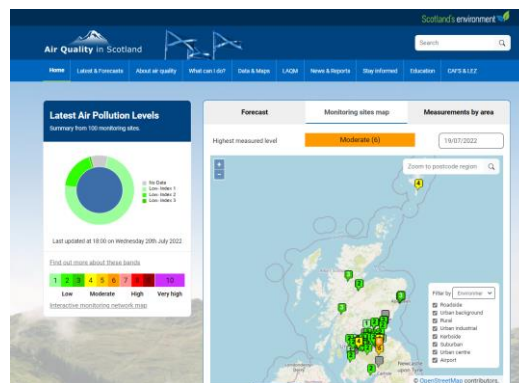


FIGURE 4. AIR QUALITY IN SCOTLAND WEBSITE FOR 19<sup>TH</sup> JULY 2022

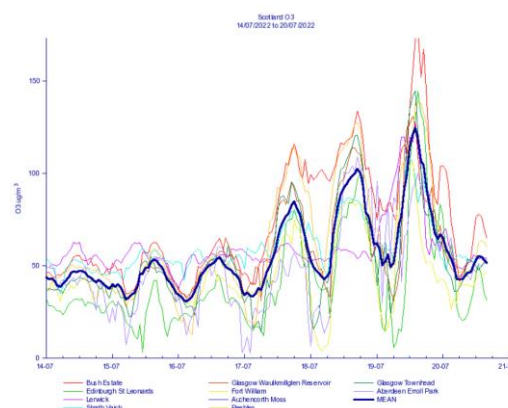


FIGURE 5. GRAPH OF SCOTTISH O<sub>3</sub> CONCENTRATIONS BETWEEN 14<sup>TH</sup> AND 21<sup>ST</sup> JULY, HIGHLIGHTING THE POLLUTION EPISODE BETWEEN 18<sup>TH</sup> AND 20<sup>TH</sup> JULY

The build-up of O<sub>3</sub> concentrations was the result of the issued ‘Amber’ (Scotland) and ‘Red’ (England) weather warning for extreme heat and recirculating air masses (Figure 6 and 7) experienced in Scotland between Monday 18<sup>th</sup> July and Tuesday 19<sup>th</sup> July.

O<sub>3</sub> is not emitted directly from any man-made source in any significant quantities. In the lower atmosphere, O<sub>3</sub> is primarily formed by a complicated series of chemical reactions initiated by sunlight. These reactions can be summarised as the sunlight-initiated oxidation of volatile organic compounds (VOCs) in the presence of nitrogen oxides (NO<sub>x</sub>). The sources of VOCs are similar to those described for NO<sub>x</sub>, but also include other activities such as solvent use, and petrol distribution and handling.

The chemical reactions do not take place instantaneously, but can take hours or days, therefore ozone measured at a particular location may have arisen from VOC and NO<sub>x</sub> emissions many hundreds or even thousands of miles away. Maximum concentrations, therefore, generally occur downwind of the source areas of the precursor pollutant emissions. As a result, ozone concentrations are often found at their highest in rural locations. Ozone irritates the airways of the lungs, increasing the symptoms of those suffering from asthma and lung diseases. It can also damage flora and fauna.

In Scotland, O<sub>3</sub> is only measured at 11 sites, for details please visit [24 Hour summary \(scottishairquality.scot\)](https://www.scottishairquality.scot/24-hour-summary).

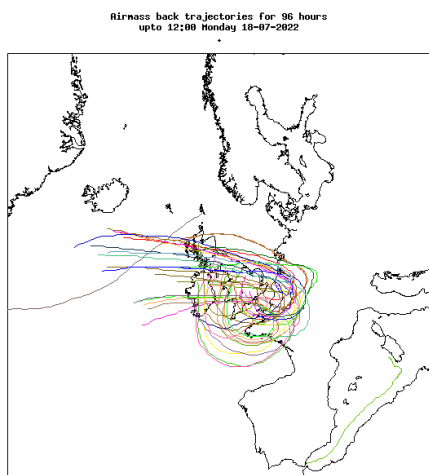


FIGURE 6. AIR MASS FOR 18<sup>TH</sup> JULY 2022

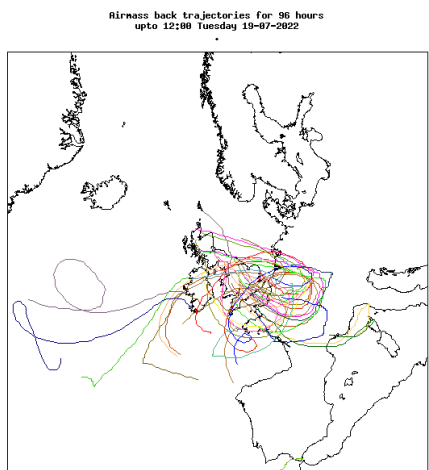


FIGURE 7. AIR MASS FOR 19<sup>TH</sup> JULY 2022

## 2021 SITE AUDIT UKAS CERTIFICATES AND Q1 2022 DATA MARKED AS RATIFIED

Please be advised that last year's QA/QC site audits UKAS accredited certificates can be located [here](#). In addition, the 2022 Quarter 1 data (January to March 2022) is now locked as ratified on the Air Quality in Scotland website.

This data and all historic data can be accessed via the data selector tool located on the Measure and Annual Statistics page [here](#). The data can also be analysed using a variety of R based Openair analytical tools [here](#). If you have any issues with any of these functions please contact one of the Ricardo Energy and Environment Air Quality team by emailing [aq-monitoring-scotland@ricardo.com](mailto:aq-monitoring-scotland@ricardo.com).

## SAQD QAQC ACTIVITIES

Ricardo have almost completed the six-monthly summer audits, with only a few audits remaining.

An audit summary will be sent to you after each audit visit. If you have not received an audit summary or you are unsure of the content and actions required, please contact [aq-monitoring-scotland@ricardo.com](mailto:aq-monitoring-scotland@ricardo.com).

## QUESTION AND ANSWERS SECTION

This section will provide answers to frequently asked questions that relate to different aspects of LAQM ranging from Local Site Operator (LSO) duties to advanced data analysis queries. If you have a question you would like to be answered in this section, please contact [aq-monitoring-scotland@ricardo.com](mailto:aq-monitoring-scotland@ricardo.com).

*Q. How can I reduce my exposure to air pollution?*

*A:* When cycling or walking, plan to avoid busy main roads – use quieter side roads and off-road routes if available. If you are exercising outside avoid busy roads. Be aware of days when air pollution is high by registering for the Know &



Respond service or using our free app for iPhone or Android smartphones.

Please visit <http://www.scottishairquality.co.uk/what-can-i-do/protecting-health> for more information.

*Q. What is the importance of weather on air pollution?*

*A:* Weather has a powerful and complex effect on ambient concentrations of pollutants. Still, calm and dry weather can cause concentrations to increase as it provides an optimum environment for locally sourced pollution to build-up. Conversely, wet and turbulent weather allows for locally sourced pollution to be dispersed more easily.

For example, ozone (O<sub>3</sub>) pollution episodes are more apparent during periods of high temperatures and sunshine levels. These conditions allow for the photochemical reaction, which creates O<sub>3</sub>, to occur in the atmosphere. Whereas, during periods of heavy rainfall and high winds, O<sub>3</sub> pollution episodes are less apparent.

*Q: How can you tell a pollution episode is occurring whilst at site?*

*A:* The trigger levels in the table below indicate a pollution episode. If the analyser is showing concentrations in excess of these levels the analysers must not be calibrated and a visit to the site should be rearranged. Ideally calibrations should not be carried out during periods of known elevated concentrations (i.e. rush hours).

<b>Pollutant</b>	<b>Level</b>
NO <sub>2</sub>	75 ppb
O <sub>3</sub>	70 ppb
PM <sub>10</sub>	100 µg/m <sup>3</sup>
SO <sub>2</sub>	90 ppb
CO	10 ppb

## STAY CONNECTED

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