

# Air Quality in Scotland

Welcome to the ninth 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 [info@scottishairquality.co.uk](mailto:info@scottishairquality.co.uk).

## NEWS

### SCOTTISH AIR QUALITY DATABASE AND WEBSITE ANNUAL SEMINAR – WEDNESDAY 4<sup>TH</sup> MARCH 2020

The annual Scottish Air Quality Data and Website Annual Seminar is taking place on Wednesday 4<sup>th</sup> March 2020 at University of Strathclyde, Technology & innovation Centre, 99 George Street, Glasgow, G1 1RD

For further information or to register for the event please contact [SAQD@ricardo.com](mailto:SAQD@ricardo.com), and send a completed Delegate Registration Form downloadable from the link below by 24<sup>th</sup> February 2020

[http://www.scottishairquality.scot/assets/documents/news/SAQD\\_Delegate\\_Registration\\_Form\\_2020.pdf](http://www.scottishairquality.scot/assets/documents/news/SAQD_Delegate_Registration_Form_2020.pdf)

### PUBLICATION OF THE SAQD ANNUAL REPORT AND BROCHURE 2018

The [Scottish Air Quality Database Annual Report for 2018](#) was published in December 2019. The report provide a summary of the latest ratified air quality monitoring results for Scotland in 2018 - together with an update on project progress including QA/QC, website improvements, AQ mapping and the annual

seminar. The report also includes information on the air pollutant emissions in Scotland obtained from the National Atmospheric Emissions Inventory and the SEPA Scottish Pollution Release Inventory.

The [Air Quality in Scotland Brochure 2018](#) has also been published. This is an abbreviated easy to read version of the annual report.

### CLEANER AIR FOR SCOTLAND STRATEGY REVIEW

Last year the Scottish Government decided to undertake an independent review of its air quality strategy '[Cleaner Air for Scotland – The Road to a Healthier Future](#)' (CAFS) which was published in November 2015. The review was a commitment in the 2018/19 Programme for Government and was launched by the Cabinet Secretary for the Environment, Climate Change and Land Reform on 6 November 2018. A Steering Group and a chair were appointed and tasked with reviewing the progress of the CAFS Strategy to date, assessing the current state of Scotland's air quality and possible future trajectories, identifying evidence and activity gaps and finally, providing advice and recommendations on priorities for further action. After the review was carried out Scottish Government asked for wider comments, suggestions and recommendations on the review [steering group report and](#)

[recommendations](#) with a view to use these to further inform the redraft of the CAFS strategy. This process is now complete with the deadline for comments being the 13<sup>th</sup> December 2019. Scottish Government now plan to use all the information made available to them to redraft the Strategy in 2020.

#### UPDATED SCOTTISH SPECIFIC BACKGROUND MAPS

Background maps have been provided to assist Scottish local authorities in support of the Review and Assessment of local air quality. These provide background concentrations of NO<sub>x</sub>, NO<sub>2</sub>, and PM<sub>10</sub>. Modelled background mass concentrations of each pollutant can be downloaded for each 1 km x 1 km grid square in Scotland in the form of comma separated (CSV) files. Co-ordinates are given for the centre of each 1 km x 1 km grid square.

The Scottish Specific background maps have been updated using the latest data (2017) and are available here <http://www.scottishairquality.scot/data/mapping?view=data>. Users should note that 2017-based maps now replace the 2015-based maps.

Scotland specific maps are not currently available for PM<sub>2.5</sub>. The Scottish Government advise that for this pollutant, [Defra UK wide background maps](#) from a base year of 2017 are used in the review and assessment of local air quality.

The technical report that supports this has also been release and published here <http://www.scottishairquality.scot/data/mapping>.

#### DOWNLOAD THE NEW AQ SCOTLAND APP

The free AQ Scotland App has recently been updated with new functionality and can be downloaded from the Apple Store and Google Play now.



Figure 1. The new SAQD AQ App

The App provides:

- Easy access to the latest pollution levels from the monitoring sites
- Colour coded map showing the pollution forecast for individual local authorities
- Approved health advice based on the pollution levels.

The new functionality includes:

- Information on Air Quality Management Areas (AQMA) in Scotland in the form of an interactive map
- Subscription to notification alerts when moderate, high and very high pollution is measured or forecast
- Subscription to notification alerts when you enter an AQMA

#### NO<sub>2</sub> DIFFUSION TUBE MAP IS NOW LIVE ON THE WEBSITE

The new nitrogen dioxide (NO<sub>2</sub>) Diffusion Tube Map is now live on the Air Quality in Scotland website and can be found at <http://www.scottishairquality.scot/latest/diffusion-sites>.

The map provides data on all the nitrogen dioxide monitoring carried out using diffusion tubes by local authorities. The interactive map

uses a cluster functionality which enables the hundreds of diffusion tube locations to be represented on the map. The map also highlights sites that exceed the annual mean objective, illustrating pollution hotspots. When individual sites are selected the data provided includes:

- Historical bias corrected annual mean concentrations, as published in LAQM APRs
- Site meta data including site type, region and coordinates
- Graphing functionality

Diffusive samplers are widely used for indicative monitoring of ambient NO<sub>2</sub>.

Diffusion tubes are particularly useful:

- When simple, indicative techniques will suffice;
- To give an indication of longer-term average NO<sub>2</sub> concentrations;
- For highlighting areas of high NO<sub>2</sub> concentration;
- Where installation of an automatic analyser is not feasible.

They are useful for identifying areas of high NO<sub>2</sub> concentration, particularly when dealing with sources such as traffic emissions, which do not change much from day to day.



Figure 2. Diffusion tube map as shown on the SAQD website

Figure 4. Stephen and Susannah showcasing various air quality sensors to local primary schools

## CLEAN AIR DAY – JUNE 2019

Clean Air Day, co-ordinated by Global Action Plan and Environmental Protection Scotland, was a chance to find out more about air pollution, share information with your friends and colleagues, and do things to make the air cleaner and healthier for everyone. Events were held across Scotland and staff from Ricardo's measurement team were invited to attend events in Aberdeen and Glasgow to help raise awareness of air pollution and the Scottish Air Quality Database, on behalf of the Scottish Government.

Ricardo manned a stall in George Square, Glasgow, and St Nicholas Square, Aberdeen, showcasing the Scottish Air Quality Database and website, on behalf of the Scottish Government. They were engaging with locals on air pollution issues and highlighting the new SAQD [AQ App](#).



Figure 3. Victoria and Nicola in George Square, Glasgow





Figure 5. Ashleigh and Sam in Aberdeen pledging to improve air quality

## **SCOTTISH ENVIRONMENT PROTECTION AGENCY (SEPA)**

### **CITIZEN SCIENCE AND SCHOOL PROJECTS**

SEPA is currently working with partner environment agencies and the European Environment Agency (EEA) on a project to look at a variety of methods for engaging schools on air quality and how data and information can be used specifically to inform and educate children and their parents. The project will assess the effectiveness of different citizen science approaches (from direct monitoring of emissions to simple awareness-raising) and the impact they have had on behaviour change.

The active (monitoring) part of the project will close at the end of 2019, with the analysis of results and final report due to be issued during the first part of 2020.

SEPA is also in the process of updating its 'Learning about Air Quality' teaching package and looking to purchase low-cost sensors for use by schools in targeted campaigns to understand the causes of air pollution around schools and initiate behaviour changes in pupils and their families. Additionally, SEPA is still running its

school banner competitions to raise awareness with pupils of the impacts of air pollution and how behaviour change can help reduce and minimise these impacts (this will be ongoing for the foreseeable future).

If your local authority, or schools, wish to express an interest to participate in air quality citizen science projects coordinated by SEPA, please contact [colin.gillespie@sepa.org.uk](mailto:colin.gillespie@sepa.org.uk) or [graham.applegate@sepa.org.uk](mailto:graham.applegate@sepa.org.uk) for more information.

**Contact:** Graham Applegate & Colin Gillespie

## **LOCAL AUTHORITY EXPERIENCE**

In this section, we plan to showcase local authority's contribution to Local Air Quality Management (LAQM). The aim of this section will be to provide information on what air quality initiatives the local authority is undertaking, and the experiences gained. If you would be interested in contributing, please send an email to [info@scottishairquality.co.uk](mailto:info@scottishairquality.co.uk). Many thanks to Dom Callaghan at Glasgow City Council for this newsletter's contribution!

On 31<sup>st</sup> December bus operators within Glasgow's Low Emission Zone (LEZ) will be required to ensure that a minimum of 40% of all vehicle movements are by LEZ compliant vehicles. This is a big step up from the 20% level which came with the introduction of the LEZ in December of last year and is expected to have a significantly positive impact on emissions within the city centre's most polluted streets. This is a significant step towards the introduction of the full LEZ applying to all vehicles at the end of 2022.



Figure 6. Glasgow Low Emission Zone logo

While the focus remains on developing the Low Emission Zone, improvements in pollution levels continue. So much so that Glasgow City Council's Annual Progress Report made two important recommendations in respect of the city's Air Quality Management Areas (AQMA). It is recommended that the Parkhead Cross AQMA which is in place in respect of the annual mean NO<sub>2</sub> objective be revoked, and the Byres Rd / Dumbarton Rd AQMA be amended to remove the PM10 component. The order to make these changes is expected to be approved at Committee early in the new year.



Figure 7. Phase 1 map of Glasgow's LEZ (available at [Glasgow.gov.uk/LEZ](http://glasgow.gov.uk/LEZ))

In an effort to interest children in both air quality and gardening, over 100 schools were offered either a native tree or blueberry bush to plant. These plants were chosen for their air purifying

properties and the children were given the opportunity to learn more about air quality and how their actions could help to reduce pollution levels.

Contact: Dom Callaghan

### SAQD QAQC ACTIVITIES

The winter 2019 automatic monitoring site audits commenced in December 2019. Ricardo field team staff will contact the relevant local authority before visiting sites and provide a summary of results and actions (if required) to be taken by the local authority. If you have already had your site audited but have not received a summary of results, please contact any of the Ricardo Energy and Environment team.

If you have new members of staff that carry out calibrations or have staff that need a refresher, please attend the audit and the Ricardo field team member will provide the relevant training.

The information from the audits is an essential part of data quality control within the Scottish air quality database. It helps standardise the quality of data through the network and enables the data to be comparable throughout Europe.

### 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 [info@scottishairquality.co.uk](mailto:info@scottishairquality.co.uk).

*Q: How do I sign up to the email bulletin?*

*A:* You can sign up to receive emails about air pollution in Scotland from <http://www.scottishairquality.scot/stay-informed/registration>.



Through use of the six drop-down menus, you can choose the type of alert you want for specific regions and how frequently you want to receive them. Please note that your email details will only be used to send you information you request.

*Q: How to upload diffusion tube data to the diffusion tube map?*



NO2 annual mean  
data template\_v.1.xls



Scottish\_NO2\_site\_t  
emplate\_v.1.xlsx

*A:* Please use the templates (attached above) to send through your data. Alternatively, please use previously populated templates and add the 2018 annual mean data.

If you have added new sites in 2018 please include the new meta data and annual mean concentrations as appropriate. Once both templates are populated, please forward on to David Hector ([david.hector@ricardo.com](mailto:david.hector@ricardo.com)).

## STAY CONNECTED

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