



# Automatic Urban and Rural Network

Winter 2023-24 Newsletter

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# Welcome

Welcome to the Winter 2023-2024 edition of the Automatic Urban and Rural Network (AURN) Newsletter.

## New sites

As part of the ongoing PM<sub>2.5</sub> expansion a new rural background site was installed near the village of Tallington in the East Midlands, with data going live from the first of January. The site monitors ozone (O<sub>3</sub>) and particulate matter (PM).

Figure 1: Tallington Monitoring station.



## Site upgrades

Eastbourne has received a cabin upgrade due to the age of the previous cabinet – the site continues to monitor nitrogen dioxide ( $\text{NO}_2$ ), ozone and particulate matter as  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$ .

Figure 2: Eastbourne, Cabin Upgrade.



Sibton has also received a new Fidas measuring particulate matter.

Leeds Centre recently received its decommissioning audit in preparation for its cabin upgrade.

Figure 3: Leeds Centre, existing cabin to be upgraded.



Nottingham Centre is being moved, because of planned redevelopment of its current location. The old Nottingham Centre site has been closed (see Figure 4), and a replacement site Nottingham Kenmore Gardens has been installed in a nearby park (Figure 5). The cabin is in place but the site is yet to be commissioned, scheduled for February.

Figure 4: Nottingham Centre previous cabin.



Figure 5: Nottingham Kenmore Gardens.



And finally, Ladybower is also due a cabin upgrade – as anyone who has visited the site will know, this one is very tough logistically with access not being the easiest!

Figure 6: Ladybower current cabin, due for replacement.



## CMCU updates

### Sustainability reporting

Bureau Veritas, in their role as CMCU would like to thank all LSOs who have responded to the sustainability data request for the AURN across 2023. There were some reminders regarding Q4 reporting for 2023 issued within the Key Performance Indicator Self-Assessment letters in November 2023. Q4 sustainability reporting emails will be issued in the coming weeks, or depending on when you are reading this may already have been issued.

There will be additional questions in addition to the usual 'distance covered' data requested. These questions will focus on the overall performance of LSOs in 2023, and any potential changes that could have occurred during the year altering your environmental impact, for example:

- Adding an electric vehicle to the fleet
- Reducing total distance by combining site visits
- Cutting out single use plastics
- Changing the time of day visits are carried out to reduce driving time.

Finally, there will also be questions relating to the proposed improvements or measures you are looking to implement in 2024 to improve your environmental impact.



## Communications and Phase-Out of 3G

As mentioned in previous editions, the rollout of 4G and 5G communications means providers are phasing out older technologies (2G, 3G) to free up existing bandwidth and infrastructure for the new communications.

The current prediction is that 2G and 3G are going to be fully phased out by 2033; however, some providers have committed to switching off 3G much earlier than this. See the table below for confirmed dates.

To manage this risk, we have been working with our ESUs in installing new 4G routers across fully funded sites with a further round of installations planned for this year. This ensures that we will not be impacted by the 2G and 3G phasing out, and also allows us to utilise the additional remote diagnostic tools available from new analysers. It is envisaged that by the end of this month, all EA sites will be operating via 4G routers.

We would encourage LSOs to check the communications set up for any non-EA owned monitoring stations to ensure that if communications are currently via a 3G modem, plans are made to replace this before the network provider switches off 3G.

More information is available from your network provider and available on the Ofcom website.

| SIM Network Provider                                               | Planned 3G Phase Out Date       |
|--------------------------------------------------------------------|---------------------------------|
| <b>Vodafone</b> (Lebara Mobile, Asda, Talk Mobile, Voxi)           | 2023                            |
| <b>EE</b> (Co-op, Utility Warehouse, Ecotalk, Plusnet, BT Mobile)  | Early 2024                      |
| <b>Three</b> (ID Mobile, Smarty, Superdrug Mobile and Freedompop)  | End 2024                        |
| <b>O2</b> (Tesco, Giffgaff, Sky Mobile, Lycamobile, Virgin Mobile) | No information presented as yet |

## Planned Preventative Maintenance (PPM) and Fire Risk Assessments (FRA)

In the coming weeks, all LSOs supporting fully funded (Environment Agency owned) sites should receive documents concerning PPM and FRA to be completed for each AURN site covered. This will cover details about the cabin condition as well as a Fire Risk Assessment.

In addition to this, we are using the opportunity to obtain some additional information regarding on-site information to ensure our records are up to date and minimise multiple separate information requests being issued out across the year. This will be issued out for all sites on the network. The forms have been updated to include information about the number of filters and BAM tapes (if applicable) held on-site to ensure sufficient numbers are ordered. Also, health and safety information on the electrical testing dates for all equipment, fire extinguisher service dates (if applicable), expiry dates on first aid kits and if the cabin has appropriate signage.

Additionally, we are looking to review the general health and safety training that any directly contracted LSO has completed as identified as being required to complete the LSO role and provided by their employer. This may include areas such as safe driving, working at height, lone working procedures and manual handling. Records will not need to be provided, rather a confirmation that all directly contracted LSOs at a site have completed this within the last 12 months.

## CMCU Data Management Team

The CMCU team has expanded over the last few months with two new members joining the data management team. Jai Mistry and Ben Earnshaw have been working alongside the data management team for the last few months and we encourage all LSOs to add them to their contact lists for correspondence.

|                     |                                     |              |
|---------------------|-------------------------------------|--------------|
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In addition, we would also like to remind all LSOs to attend training sessions held by QAQC during their audits across the year. LSOs are reminded that contractually you are obliged to attend at least one training session per year.

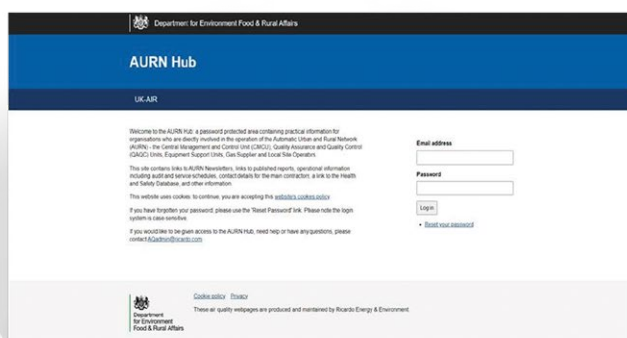
Finally, if all LSOs could continue to call into the data management team whilst on site that would be greatly appreciated.

## Updates to the AURN Hub

Ricardo has updated the AURN Hub - our online, password-protected area containing practical information for everyone who is involved in the operation of the AURN (such as Local Site Operators and Equipment Support Units).

The AURN Hub is still in the same place, <https://aurnhub.defra.gov.uk>.

The style has also been updated to match the current Defra style used on UK-AIR.



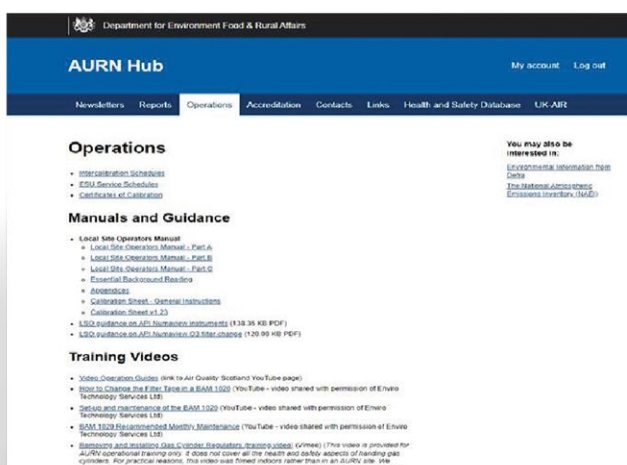
An important change is that each user must now log in using their email address, and a password which you must set yourself.

**The old user name and password that you may have used previously will no longer work.**

We have set up user accounts for all current LSOs, ESUs and others. So all you need to do, the first time you use the updated AURN Hub, is to set your own password using the 'Reset your password' link on the login page. You will get an email with password reset link.

Once logged in, you'll see the new-look AURN Hub still contains the following:

- AURN Newsletters,
- The LSO Manual,
- Guidance documents and training videos,
- Audit and service schedules,
- Contact details for the main contractors,
- A link to the Health and Safety Database (this takes you to the login page of the Health and Safety Database – you'll need to login separately with your usual H&S DB password.)
- Published reports and other information.



Please log in and have a look, especially if you have not looked at the AURN Hub for a while!

## Changes to LSO manual

A quick note to LSOs that there are some forthcoming minor changes to the LSO manual in terms of terminology for electrical appliance testing (PAT testing is now ITEE tests). A reminder of the location of the LSO manual:

<https://uk-air.defra.gov.uk/assets/documents/reports/empire/loman/loman.html>

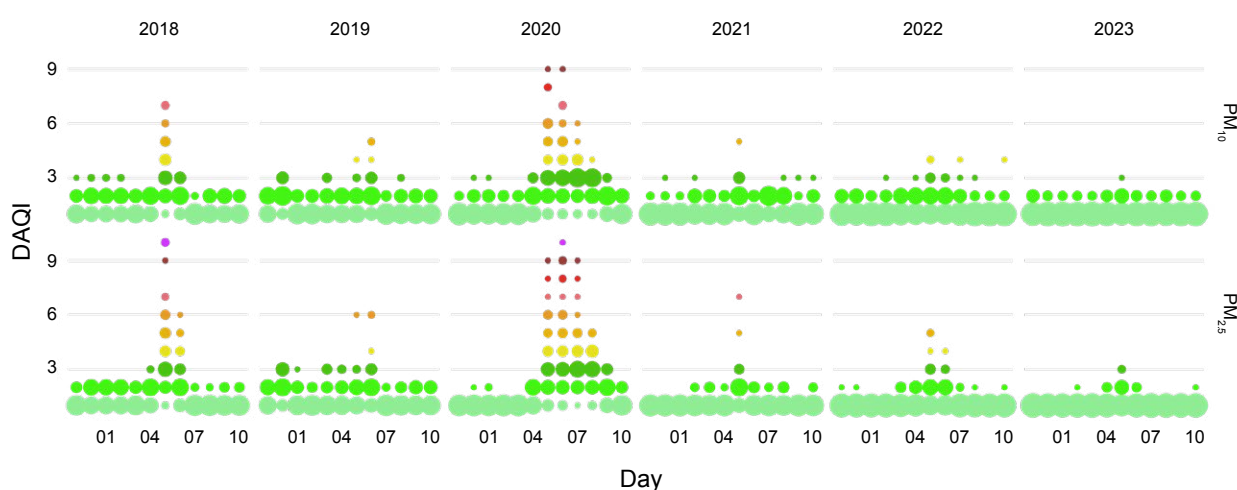
## Bonfire Night 2023

Bonfire Night 2023 fell on a Sunday, coming after the UK felt the effects of Storm Ciarán which brought with it yellow weather warnings across the South of England. Many regions across the UK experienced wet and windy weather, and consequently a lot of fireworks displays ending up being cancelled or postponed. As a result of this, overall concentrations of the typical pollutants associated with Bonfire Night were lower than previously seen in other years.

The DAQI (Daily Air Quality Index) provides a simple description of levels of air pollution, using a 1-10 scale (1 being low, 10 being very high) and separated into four bands (Low, Moderate, High, Very High) to give quick, easily accessible information to the general public.

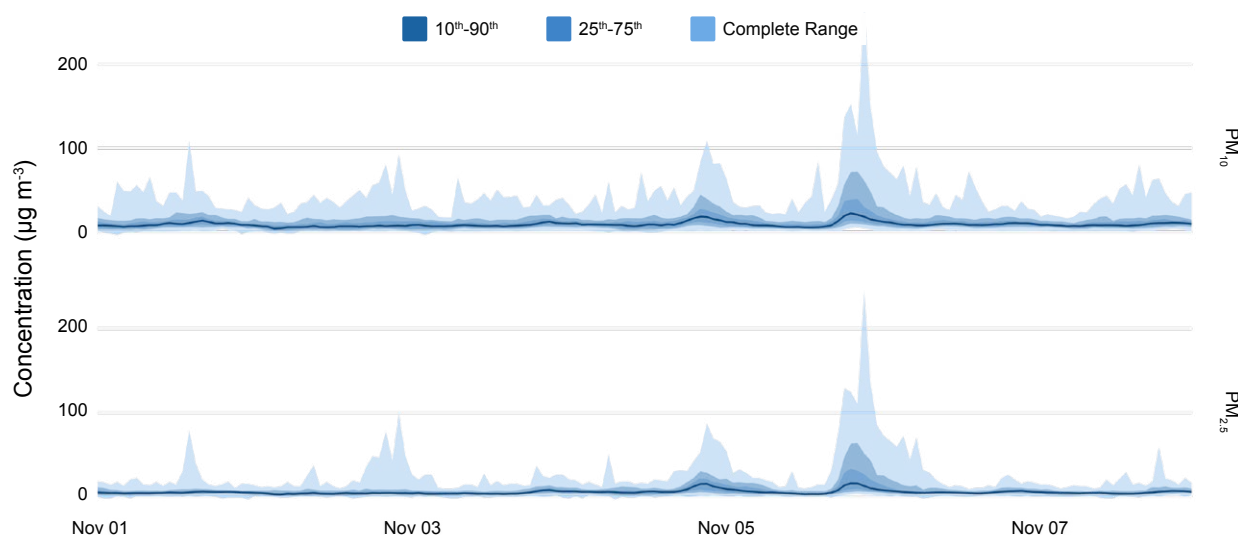
AURN data from 30/10/2023 – 06/11/2023 shows that the DAQI in England did not rise above the 'Low' band (1-3) throughout. This does not mean that localised areas didn't experience higher pollution, but in previous years (see Figure 7) such as 2018 and 2020 the DAQI measured at many sites around Bonfire Night reached the 'High' (7-9) and 'Very High' (10) bands.

Figure 7: DAQI Levels seen across previous years Bonfire Nights.



Figures 8 & 9 show that although the daily index doesn't show any sites recording a daily DAQI value above Low, that hourly measured data peaked at high values clearly on the 4<sup>th</sup> and 5<sup>th</sup> for both  $PM_{2.5}$  and  $PM_{10}$ .

Figure 8: Summary of  $PM_{10}$  &  $PM_{2.5}$  Concentrations over the Bonfire Night Period.



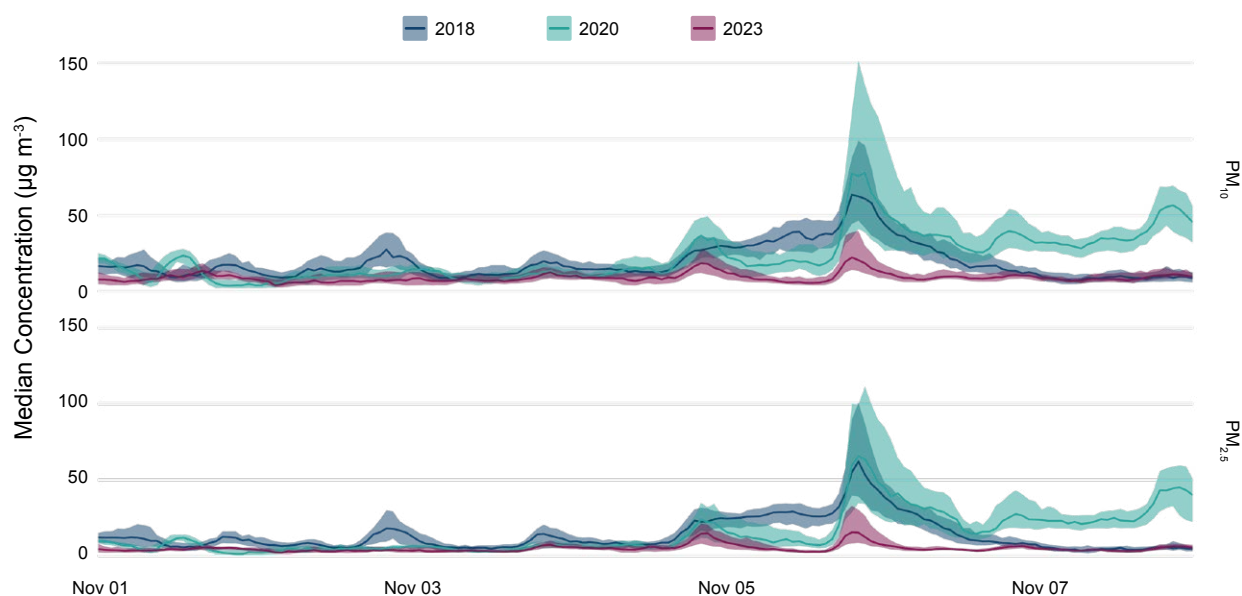
There are several potential reasons behind the lower DAQI recorded on Bonfire Night 2023. Figure 10 shows the median and interquartile range (25<sup>th</sup> and 75<sup>th</sup> percentile) of hourly measured particulate matter concentrations for 2023, 2020 and 2018.



The comparison between the three years shows that:

- The overall concentrations of PM are lower in 2023 – as the graph shows, the median line peaks during the Bonfire Night spike at just under  $16\mu\text{g m}^{-3}$  in 2023 compared to just over  $62\mu\text{g m}^{-3}$  in 2018.
- Bonfire Night peaks in previous years have been more protracted. This is shown in 2018, where the peak of the evening of the 4<sup>th</sup> merges with that of the 5<sup>th</sup> leading to a singular extended period of elevated PM concentrations.

Figure 9: A Comparison Between 25<sup>th</sup>, 50<sup>th</sup> and 75<sup>th</sup> percentiles of  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  in Bonfire Nights 2023, 2020 and 2018.



Bonfire Night still remains one of the most interesting nights recorded by the AURN network, generally leading to higher PM concentrations and providing vital data and insight into dispersal and progression of pollution events. Years like 2023 with reduced pollution in comparison to previous years should not be used as a reason to dismiss the public health implications of widespread bonfires and fireworks – many people attending events would still have experienced immediate, short-term effects of breathing particulate contaminated air.

Please see the full report produced by Ricardo [here](#).

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