

Residential Air Quality letter for particulates matter 2.5 (PM 2.5)

Dear Geoff Raw,

I am submitting the following letter under Council Procedure Rule 23.3 to be included on the agenda for the Environment, Transport and Sustainability Committee meeting of 23rd June 2020.

Following on from a resident complaint regarding a bonfire in the garden at the rear of a neighbour's house within Hollingdean, the issue of bad air quality in residential areas, and in particular the levels of particulate matter 2.5, known as PM 2.5, has been brought to my attention and I believe that it deserves some more attention than it has received in previous years.

The particulate problem

The tiny particulates, called PM2.5 and PM10, are completely invisible, and they can enter the bloodstream and get stuck in our organs. The British Heart Foundation (BHF) study from 2019 highlighted that an estimated 11,000 deaths are attributable to particulates and 40,000 in total from bad air quality [1]. Another recent study, posted in the medical journal the Lancet, estimated that, on average, bad air quality has an effect of reducing life expectancy by over one year in European countries [2]. In towns and cities, this is the result of one in 19 deaths [3] and you are 25 times more likely to die from long-term exposure to poisonous air in towns and cities than being involved in a car crash. [4]

In residential areas, PM2.5 is mainly caused by burning wood which many people assume are clean and safe. In fact, a single woodburning stove, which meets all European regulations, emits around the same amount of particulates as six modern diesel lorries or 18 modern diesel cars according to Dr Fuller in his 2017 research. [5] As a result, domestic wood and coal burning (the focus of this letter) is the largest single source of particulate pollution according to the Department for Environment, Food and Rural Affairs, and is thought to be responsible for 38 per cent of all PM2.5 in the UK, compared to 12 per cent for all road transport according to government figures. [6] Domestic wood-burners and open fires are found in 7.5 per cent of homes in the UK [7] and is expected to be the main source of heat in many thousands of properties in Brighton and Hove.

The reality is, if we are to improve people's health and the environment then we need to have a conversation about wood burners and we need to understand how damaging burning wood is, especially given that wood burners also have a detrimental effect inside your home, where you might have thought that you were safe from the bad air quality that most falsely assume is mainly from cars and that it is particularly harmful to those with underlying conditions and for younger and older residents. [8] [9] We should think about the people within our neighbourhoods, and beyond, that may be adversely affected by the pollution and prioritise them.

What does the council currently do?

The Environmental Health team can follow up on bonfire complaints with a letter to the resident and can also knock on their door to talk to them- although the advice online recommends that residents should knock on their neighbour to chat as a first port of call as the people doing the bonfire mightn't know that they are causing a problem. If the problem continues and there is evidence that there has been a prolonged disturbance and clear nuisance for the neighbour, action can be taken against the person. However, in the last year, no cases have been escalated to this level. Personally, I think we are probably being too lenient on this issue- people can have adverse health effects even from one single event and more action should be taken to prevent air quality being damaged.

In the Local Air Quality Management (LAQM) annual status reports, the council looks at reducing PM 2.5 on page 14 and discusses the 5 Smoke Control Areas, awareness campaigns around coal and wood burning, efforts to minimise the use of static diesel generators, responding to complaints about bonfires (as mentioned above) and promoting Considerate Construction schemes as part of CEMP for developments and dust suppression technique. These steps are commendable, but I think they need to go further. The report looks further into the PM2.5 in the local authority in table A.5 on page 39- there are only 3 locations which monitor PM2.5 concentrations and only one which is in an 'urban background' at Preston Park. Is this enough? Page 40 shows annual graphs from the two 'roadside' monitors indicating that a large number of days went over the WHO limit. Certainly, I have concerns that PM2.5 is generally being left out of considerations a little- the only comments on the council website state that '*PM2.5 shows an improving trend in Preston Park*'. I'd challenge this interpretation given that between 2016 and 2018 the annual average total went from 9 to 8.9- hardly a significant decrease and lacking enough to be highlighted as a trend. The main part of the report is focus on NO2, with only 4 pages on PM2.5 out of the whole report of 67 pages. [10]

What can we do?

We face an air pollution emergency and need to tackle this. Every has the right to breathe clean air and there are a number of things that I think we could do as a council.

Therefore, I request that the ET&S Committee commissions a report to be received by the Air Quality Programme Board that considers the issues below and reports its findings back to the ET&S Committee and Health & Wellbeing Board:

- **Smoke Control Zones exist in 5 places in the local authority but there is a lack of enforcement in designated smoke zones? Can we ensure that there is more enforcement in these areas? Would there be any use in extending the concept of a smoke control zone to the whole city?**
- **Implement School Streets initiative in all schools in the local authority where it is feasible**
- **British Heart Foundation had a public awareness campaign called 'You're Full of It' which could be copied and promoted locally [11] as well as other information, such as from the group Burnright, to raise awareness of how people can mitigate the air pollution by using equipment etc. [12]**

- **Raise awareness of the effect of dirty chimneys on air quality and fire safety and promote cleaning them**
- **Ensure all council owned properties have an appropriate heating system that means they don't require to burn wood**
- **Review the Centre for Cities 'Cities Outlook 2020' and investigate recommendations which include 'levelling up' to London-style Clean Air Zones (CAZs), expand focus to tighter emissions standards for burning stoves and ban domestic burning in areas with high PM 2.5, restricting sale of polluting fuels and work on raising public awareness [13]**
- **Change the council's targets to the WHO guidelines and call for the government to accept them rather than EU standards- current the EU limits – which the UK comfortably meets – for fine particulate matter (PM2.5) pollution are $25\mu\text{g}/\text{m}^3$ as an annual average. The WHO limits are tougher, at $10\mu\text{g}/\text{m}^3$ as an annual average. Evidence from BMJ that can have effects well below the WHO guidelines but at least they are an improvement! [14]**
- **Install more monitors to measure what the particulate concentrations in a variety of Brighton and Hove residential areas are like and identify how often they exceed the WHO amounts every year.** Currently there is only one official monitor in a 'residential' setting in Preston Park, however, this area is surrounded by green space so likely to not reflect the actual numbers.
- **Explore the use of low-cost monitors such as provided by Purple Air and open data/citizen science concepts and consider whether this could be trialled in the city.** The advanced air quality sensors, PA-II-SD are \$259.00 each (just over £200) so perhaps installing 10 of these in residential areas of the city could be an option [16]

Yours sincerely,

Mr Martin Deborne

Links

[1] <https://www.bhf.org.uk/what-we-do/our-research/risk-factor-research/air-pollution-research>

[2] <https://www.sciencedaily.com/releases/2019/03/190312075933.htm>

[3] <https://www.theguardian.com/environment/2020/jan/27/one-in-19-deaths-uk-cities-air-pollution>

[4] <https://www.independent.co.uk/environment/air-pollution-deaths-towns-cities-car-crash-particulate-matter-environment-a9302466.html>

[5] <https://www.mirror.co.uk/news/uk-news/wood-burning-stoves-could-damaging-13608649>

- [6] <https://airqualitynews.com/2019/11/26/turning-up-the-heat-on-indoor-air-quality/>
- [7] [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/517572/Summary results of the domestic wood use survey .pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/517572/Summary_results_of_the_domestic_wood_use_survey.pdf)
- [8] <https://airqualitynews.com/2020/06/04/lung-conditions-improve-for-millions-during-lockdown/>
- [9] <https://www.telegraph.co.uk/news/2019/01/07/four-ten-children-breathing-toxic-air-school-run/>
- [10] <https://www.brighton-hove.gov.uk/sites/brighton-hove.gov.uk/files/2019%20air%20quality%20status%20report%20-%205%20Sept%202019.pdf>
- [11] <https://www.bhf.org.uk/toxicair>
- [12] <https://www.burnright.co.uk/>
- [13] <https://www.centreforcities.org/air-quality/>
- [14] https://amp.smh.com.au/national/no-safe-level-study-links-pm2-5-pollution-to-increased-risk-of-cardiac-arrest-20200128-p53v98.html?_twitter_impression=true
- [15] <https://www2.purpleair.com/collections/air-quality-sensors>