

Written evidence submitted by the Aviation Environment Federation**Response to the Environmental Audit Committee's inquiry into outdoor and indoor air quality targets**Preamble

AEF is a UK NGO campaigning on the environmental impacts of aviation, including impacts on air quality around airports. Airports generate emissions that contribute to air pollution from a number of sources including on-site power and heating, equipment to service aircraft, on-site vehicles, airport-related traffic on surrounding roads (staff, passengers and freight) and aircraft both on the ground and in the air (aircraft operations produce NO_x and PM - particulate matter). Background emissions are also important to consider as airports are often located in or near major urban centres or transport networks that already have air quality problems, which the airport's activities can exacerbate.

Are the current national targets for outdoor air pollution ambitious and wide-ranging enough to provide adequate protection for public health and the environment in a) rural and b) urban areas?

No. Specifically in the context of particulate matter, the Government's new targets are not sufficiently ambitious or wide ranging. The Annual Mean Concentration Target (AMCT) to reduce PM_{2.5} to 10 micrograms per cubic metre of air by 2040 is based on air quality recommendations made by World Health Organisation in 2006. Reaching an evidence-based conclusion that air pollution amounts to a public health crisis, the WHO updated its guidance on air quality in September 2021. Its current recommendation is to reduce PM_{2.5} concentrations to 5 micrograms per cubic metre of air as soon as possible.

The UK Government will know that even low concentrations of PM_{2.5} have significant negative health impacts. It is unacceptable to adopt WHO guidance that is so far out of date. A 35% reduction in population exposure by 2040 (PERT) is also too little and too late, as with the AMCT.

In addition, it is puzzling that interim concentration and exposure targets are a key part of the Government's strategy for improving air quality. The WHO's recommended interim targets are focused on areas where concentration of PM_{2.5} is 35 micrograms per cubic metre of air, which is very high. Clearly, the WHO's interim targets are intended to accommodate areas that will need greater flexibility to reach its 5 micrograms per cubic metre of air target. Areas where PM_{2.5} concentrations are comparatively low, including England, do not need this flexibility. The UK Government's proposed interim targets for England will unnecessarily prolong the implementation of the AMCT (to 2040).

We are also concerned that the Government's targets relating to particulate matter focus on PM_{2.5} generally, without consideration of ultrafine particles (UFPs). Defra's 2022 consultation evidence report states: "Whilst it is likely that some components of PM_{2.5} may be more harmful than others, evidence is not sufficiently developed to be able to focus on specific components for the purposes of

target setting. Therefore, current evidence supports a focus on PM2.5 total mass.” This approach is not justified.

The WHO states that, in addition to further research on UFP, “due to health concerns related to these pollutants, ... approaches for mitigation are warranted.”. The WHO also states that, in urban areas, transportation – including aviation – is usually the main source of UFP. Dr Gary Fuller’s recent paper on the findings of his research at Gatwick Airport draws attention to Particle Number Concentrations (PNC) associated, not just with road traffic but also with the airport’s runway: “Mean PNC (7500–12,000 p cm⁻³) were similar to those measured close to a highly trafficked road in central London. Peak PNC (94,000 p cm⁻³) were highest at the site closer to the runway. The airport source factor contributed 17% to the PNC at both sites and the concentrations were greatest when the respective sites were downwind of the runway. However, the main source of PNC was associated with traffic emissions.”

Not fully understanding the health impacts of UFP is not a sufficient reason to avoid taking specific action to mitigate it. The risk of serious or irreversible damage posed by UFP is plausible and real, such that measures taken to mitigate or reduce it may be cost-effective in terms of the health benefits gained. The precautionary principle is clearly set out in the Environment Act, and the Government must abide by this.

With regard to both the AMCT and PERT, Defra stated in 2022 that “The proposed targets best reflect the evidence and provide an appropriate balance between health benefits and restrictions on society. Going further or faster with respect to the target levels or dates would require much greater restrictions on society and increased costs, for an increasingly smaller benefit.” However, Defra was also very clear that even very small reductions in PM2.5 would have significant health benefits. According to the Central Office of Public Interest polluted air affects 97% of homes. If Defra agrees that polluted air is an emergency nationally, the additional costs are surely likely to be worth the benefit. It is in any case unclear how this assessment of increased costs versus benefits has been made in the absence of proposals for mitigation policies.

The modelling of both the AMCT and the PERT did not take into consideration the impacts, in terms of PM2.5 including UFP emissions, of new major infrastructure projects, such as expansion at airports and major new road-building. At the same time, there are several live airport planning applications in addition to hundreds of new (non-aviation) development projects that are seeking approval. The Government has not clarified how airport (and other) planning decisions will help deliver its legally binding air quality commitments in the context of the Government’s policy support for airport expansion and other development.

Are measures currently in place, and those proposed in the revised Air Quality Strategy for England, sufficient to achieve national targets?

No. When Defra consulted on its AMCT and PERT targets, AEF was concerned to see no mention of airports or aircraft operations as sources of particulate matter. Yet studies carried out at Schiphol and Los Angeles Airports have shown that there are very high concentrations of particulate matter around airports and that polluted air associated with jet engine combustion can drift several miles.

Defra's 2022 consultation documents detailing its proposed AMCT and PERT targets showed that the highest concentrations of PM2.5 are in the South East where the UK's busiest airports are located. However, the Government has committed to monitoring "hotspots" of PM2.5 concentration, rather than near-source locations such as airports. While the Government has undertaken to add PM2.5 monitors to the Automatic Urban and Rural Network, AEF feels strongly that additional monitors should be placed in residential areas located near to airports and under concentrated flightpaths taking account of the prevailing wind direction. There is currently a lack of data about airport air pollution levels, with the last national airport overview being undertaken twenty years ago in support of the 2002 Aviation White Paper. The evidence must be updated, especially as several airports in England have applied for or have been granted planning permission and development consent to expand their operations.

Although AEF does not believe that airport expansion can be justified in a climate emergency, it would be particularly sensible to monitor the impacts on air quality as aircraft movements and road traffic increase following the pandemic, and especially at those airports that have recently been granted permission to increase flight numbers. More immediately, it would be sensible to monitor air pollution around airports as traffic levels increase post-pandemic. While Defra modelling indicates that the air quality trend overall in England is improving, modelling around Heathrow Airport shows that air quality around it will worsen if it constructs and operates a third runway. If near-source locations such as airports are not monitored, it is difficult to understand how the Government plans to meet its AMCT, especially as a pathway is yet to be sketched out.

While the major problems are most likely to be at larger airports, pollution levels should also, we suggest, be monitored at smaller airports especially where they have housing or public amenities very close by. For example, we are aware that many smaller airports, such as Southend, have aprons and taxiways close to housing and community facilities where the running of aircraft engines and APUs can lead to localised exposure.

AEF is concerned that the Government's decision not to monitor near-source locations is connected to its failure to include a PM2.5 emissions ceiling in its air quality targets. The Environment Act commits the Government to adhering to five key environmental principles, which include "the principle of preventative action to avert environmental damage", "the principle that environmental damage should as a priority be rectified near-source" and "the polluter pays principle". Given the contribution of the aviation sector to concentrations of particulate matter, the Government must commit to near-source monitoring where communities are located in the prevailing wind of airport runways, flightpaths and associated road traffic.

What are major barriers and challenges to achieving national targets on air quality?

In terms of air pollution associated with airports and aircraft operations, a major challenge and barrier to both setting and achieving national targets on air quality is a failure of Government to acknowledge that improving air quality must involve some level of demand management within the sector. The recent decision of the Dutch Government to limit flights at Schiphol for noise and air pollution reasons is notable in this context.

There is also a failure of political will. The UK Government has an unfortunate record of failing to meet legally binding air quality targets. The EU's Ambient Air Quality Directive (translated into UK law as the Air Quality Standards Regulations 2010) set maximum concentration levels for key pollutants, to be achieved by 2010. Persistent breaches of the limits prompted environmental law campaigners ClientEarth, in 2013, to launch a series of successful legal actions against the UK Government, with the result that Defra was forced by the courts to increase the scale of ambition in its plans for policy action. To restore confidence, the Government must demonstrate that the AMCT as well as the PERT will be met without external pressure. With regard to possible future breaches of the legal targets, we are also concerned that the Office for Environmental Protection does not appear to have the necessary independence from the Government to enforce the legal requirements.

Does the Government provide sufficient funding and devolved powers to local authorities in England to improve local air quality? If not, what additional funding or devolved powers are required?

The 2023 Air Quality Strategy is clear that the primary, day-to-day responsibility for tackling air pollution rests with local authorities. Authorities are limited, however, in terms of both powers and resources in the context of local air pollution impacts associated with airports. While local planning authorities do have powers relating to planning decisions, the extent to which authorities can take account of air pollution impacts is unclear. However, they will be expected to deal with air pollution impacts that result from airport expansion.

Meanwhile, in the context of the UK's Airspace Modernisation Strategy – the purpose of which is to remove any airspace constraints on growth within the aviation section – local authorities have no powers in terms of constraining polluting activities.

The 2023 AQS states that “Local authorities should work closely with ports and airports to reduce air quality impacts, particularly where they are in an Air Quality Management Area.” It also states:

“Every major commercial airport in the UK is required by law to have facilities for consultation, providing a forum for discussing airport-related issues – including air quality - with all those who may be affected by its operations.

Local authorities have an important representational role on these forums, particularly when they represent communities close to or affected by the airport's operations. Local air quality issues must be considered as part of these discussions.”

If local authorities have primary responsibility for reducing air pollution in their localities, they require greater powers than merely taking part in an airport's discussion forum.

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