National statistics

Concentrations of particulate matter (PM10 and PM2.5)

Updated 28 April 2022

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ir quality statistics in the UK, 1987 to 2021 - Particulate matter PM10/PM2.5)

dated 28 April 2022

Why measure PM?

rticulate matter (PM) is everything in the air that is not a gas and therefore consists of a huge variety of chemical compounds and aterials, some of which can be toxic. Due to the small size of many of the particles that form PM some of these toxins may enter the oodstream and be transported around the body, lodging in the heart, brain and other organs. Therefore, exposure to PM can result in erious impacts to health, especially in vulnerable groups of people such as the young, elderly, and those with respiratory problems. As a sult, particulates are classified according to size. The UK is currently focused on measuring the fractions of PM where particles are les an 10 micrometres in diameter (PM10) and less than 2.5 micrometres in diameter (PM2.5) based on the latest evidence on the effects PM to health.

oth PM and the precursor pollutants that can form it can travel large distances in the atmosphere. A small proportion of the ncentrations of PM that people in the UK are exposed to come from naturally occurring sources such as pollen and sea spray pproximately 15 per cent). Another third is transported to the UK from other European countries. However, around half of UK ncentrations of PM comes from anthropogenic sources in the UK such as domestic wood burning and tyre and brake wear from hicles. As such, it is in the interest of the UK to measure concentrations of PM as close to these sources of anthropogenic emissions a ssible in order to effectively assess exposure to PM that can tackled via UK policies.

he Air Quality Standards Regulations 2010 require that concentrations of PM in the UK must not exceed:

- An annual average of 40 $\mu g/m^3$ for PM10;
- A 24-hour average of 50 $\mu g/m^3$ more than 35 times in a single year for PM10;
- An annual average of 20 $\mu g/m^3$ for PM2.5.

Trends in concentrations of PM10 in the UK, 1992 to 2021

1 Annual mean concentrations of PM10 in the UK, 1992 to 2021

he PM10 index shows the annual mean, averaged over all included sites that had annual data capture greater than or equal to 75%. Th aded areas represent the 95% confidence interval for the annual mean concentration for roadside sites (red) and urban background es (blue). These intervals narrow over time because of an increase in the number of monitoring sites for both roadside and urban ckground sites; and a reduction in the variation between annual means for PM10 measured at roadside sites. Annual means for dividual sites can be found in the PM10 statistical tables (https://www.gov.uk/government/statistical-data-sets/env02-air-quality-statistics) that company this report.

gure 6: Annual mean concentrations of PM10 in the UK, 1992 to 2021