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Background briefing

UK and European heatwave 2025

2025

Contents

Key points

- It is estimated that the June-July 2025 heatwave in London will have resulted in around 260 heat-related deaths. Of these around 170, or 65%, can be attributed to climate change, meaning the death toll was tripled due to climate change.
- Heatwaves also have an impact on the economy – reducing productivity and increasing costs to the NHS.
- Climate change means heatwaves like this are now expected to occur every 6 years in London. Without climate change, we would have only expected such an event once every 60 years at most.
- Adaptation to manage urban heat risk is essential to deal with climate impacts that are now locked in because of historic greenhouse gas emissions.
- Heatwave temperatures will keep rising and future death tolls are likely to be higher, until the world largely stops burning oil, gas and coal and reaches net zero emissions.

Climate change was responsible for 170 excess heat-related deaths in London 2025 heatwave

Many cities across Europe experienced a heatwave in late June-early July 2025. Temperatures in London reached 34.7°C, while other parts of Europe saw record-breaking heat, including a new high of 46.6°C in Lisbon.

Scientists have estimated that in London, the hot weather experienced between 23rd June and 2nd July 2025 will have resulted in around 260 excess heat-related deaths, and of these, around 170 (or 65%) can be attributed to climate change. This means that the death toll was tripled due to climate change.

The study also examined the impact of the heatwave as well as the role of climate change across eleven other European cities and found similar results. In Madrid over 90% of the expected excess deaths were estimated to be linked to climate change.

What impact is climate change having on heatwaves?

These findings are the results of a “climate attribution study”, which examined the difference between the nature of the heatwave experienced in our current climate (which has been warmed by 1.3°C as a result of burning fossil fuels and deforestation) compared with a hypothetical climate where no climate change has occurred.

The study showed that in our changed climate, heatwaves like the one experienced in London from 23rd June to 2nd July 2025 are no longer rare events and are now expected to occur every

6summers. In a world where no warming had taken place, we would have only expected such an event once every 60 years at most.

Or viewed another way, in a world without global warming, we would have expected heatwaves like this to have been 2-4°C cooler.

On our current trajectory, average global temperatures are expected to increase by 2.6-3.1°C this century. In this scenario, we can expect heatwaves in future that are at least 2-4 degrees hotter.

Who is most at risk from heatwaves?

Some people are more vulnerable to adverse health impacts from heat than others. Those who are at greater risk include:

- Older people
- Babies and children
- People with certain physical health conditions, such as cardiovascular disease or diabetes
- People with certain mental health conditions, such as schizophrenia
- People who work outdoors, in hot areas, and/or do physically demanding work
- People experiencing homelessness
- People living in buildings that are prone to overheating
- People who are pregnant

During the summer of 2022, when England experienced temperatures above 40°C for the first time, the UK Health Security Agency estimated 2,985 heat-related excess deaths in England. Almost all of these occurred in people aged 65 or older.

In the summers of 2023 and 2024, statistics published by the UK Health Security Agency and Public Health England show that there were 2,295 and 1,311 heat-associated deaths respectively in England, again with the highest mortality rates in older people.

How do heatwaves affect productivity and the economy?

The health-related impacts of heat stress can affect workers' productivity in a number of ways, including through:

- Time off work
- Tiredness
- Need for more breaks
- Impaired judgement
- Reduced coordination
- Reduced cognitive function
- Risk of accidents or occupational injuries

The effects can be significant. As daily temperatures rise above 34°C, workers can lose 50% of their work capacity. A 2024 UK survey published by the Grantham Institute found that more than 40% of people said that they struggled to perform work tasks during hot weather because their workplace becomes uncomfortably hot.

The Office for National Statistics has estimated that hot days in Great Britain resulted in an annual GVA (Gross Value Added) loss of £1.2 billion over the period 1998-2021 (this assumes some adaptation measures, like air conditioning, were in place).

Emerging research is starting to reveal more detail about the impact of hot weather on reductions in the number of hours worked and levels of worker effort.

Heatwaves also result in additional costs to the public purse, for example through additional demands on the NHS and emergency services and through damage to publicly-owned infrastructure and assets such as roads and railways. The Office for Budgetary Responsibility has estimated that over the next 50 years, total potential direct fiscal costs to the UK resulting from heatwaves could be:

- £49 billion in a world where temperatures are kept below 2°C or
- £64 billion in a world where temperatures are kept below 3°C

(in 2024-25 prices).

Are people worried about heatwaves?

According to Grantham Institute research, more than a third (35%) of UK citizens are very or extremely concerned about heatwaves and hot weather in the UK. Heatwaves are already affecting a large proportion of the population; 50% of people agreed that their homes got uncomfortably hot indoors during heatwaves, while 52% said they struggle to sleep during hot weather.

A large proportion (40%) of people think that the government is doing too little to prepare for the impacts of climate change (including preparing for hotter summers). For those people who have experienced negative health impacts form extreme heat, this figure increases to 50%.

What is being done to protect people in the UK?

Adverse Weather and Health Plan

The UK Health Security Agency publishes an Adverse Weather and Health Plan, which sets out how the public sector, voluntary sector, health and social care organisations and local communities can work together to protect health and wellbeing.

Heat-health alerts

The Met Office and UK Health Security Agency jointly run the Heat-Health Alerts system, which provides early warnings when weather conditions are likely to pose a threat to people's health. When an alert is issued, information and advice is sent to health and social care professionals.

Members of the public can also register to receive the alerts via email.

Preventing buildings from overheating

In England, National Building Regulations "Part O" provides a standard to address overheating in new residential buildings. However, there aren't yet measures in place to drive adaptation in existing homes.

The Climate Change Committee's 2025 assessment of progress in adapting to climate change identified an important evidence gap when it comes to overheating in buildings; we don't know how overheating is changing over time or what the uptake of cooling measures is because the appropriate data is not currently being collected.

Protection in the workplace

In the UK, employers are required to provide a "reasonable indoor temperature" and protection from adverse weather for outdoor sites. However, unlike many other European countries, there is currently no legal maximum temperature for workplaces.

Trees for London

The urban heat island effect means that cities and urban centres are more prone to heat risks. One way to help reduce the risk is to increase "green and blue" spaces that use plants and water to provide natural cooling.

In London, "Trees for London" is a £3.1m tree planting programme that aims to provide shade and cooling for the city.

Urban heat

While many of the measures above will contribute towards resilience to extreme heat in urban areas, the Climate Change Committee has criticised the government's lack of an overarching strategy for managing future urban heat risks. In its 2025 progress report, it described the policies and plans for urban heat risks as 'limited' and was unable to assess progress on delivery and implementation owing to a lack of data on urban greening or publicly accessible cool spaces.

Researchers at LSE have also called for a National Heat Risk Strategy.

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