

A whole-systems approach to Climate Action, Health and Thriving Communities: Outdoor Air Quality



Key Points:

- Climate actions can produce co-benefits as well as unintended consequences.
- Participatory systems mapping can help local authorities explore wider impacts.
- We highlight outdoor air quality which is an important co-benefit of climate action.

To limit climate change, we need to reduce our greenhouse gas emissions to meet legally binding targets.¹ To do this we need to get more energy from renewable sources, particularly for heating and transport where we use the most. This means shifting from gas boilers and petrol or diesel vehicles, towards cleaner alternatives which produce less pollution.

At a community and individual level, we can also make changes by insulating more homes, using cars less often, adopting plant-based diets, recycling more waste.

However, none of these changes happen in isolation – many of them require behaviour and service changes that have both positive and negative effects.

There are clear links between climate action and some council services, such as housing and transport, but links to others may not be obvious. By moving towards a “whole systems approach”, we can find these links and help prevent policy clashes.

The WM-Net Zero study team has worked with local authority officers, using participatory systems mapping to explore the relationships between climate actions and other local policy priorities.² We have identified some areas not typically associated with climate action but very relevant for its success.

Many decisions related to how we make transport cleaner and less polluting, for example – electrification, have wider consequences for outdoor air quality.

Participatory Systems Mapping

Participatory Systems Mapping is a research method where people with different perspectives are brought together to create a causal diagram (map) of the connections in a “system” of interest. Systems maps support policy design and analysis by revealing key leverage points (potential targets for maximally effective intervention) and trade-offs.

Explore insights from our
**Participatory Systems Mapping for
 delivering**

[‘Thriving Net Zero Communities in the West Midlands’](#)

What does Net Zero mean for Outdoor Air Quality?

Relevant areas of statutory responsibility:

- Environmental health
- Highways and roads
- Waste management

Climate strategies often include replacing petrol and diesel vehicles with battery electric or hydrogen alternatives to remove tailpipe emissions. However, electric vehicles are heavy, cause road and tyre wear, and still contribute significant air pollution.³

When people invest in buying an electric car, their car use can increase due to it being cheaper and perceived as 'guilt-free' driving.^{4,5} As more people adopt electric vehicles, this could increase traffic and congestion and mean that the non-electric cars still in use emit more pollutants as a result.

Cars, whether electric and 'net zero' compliant or combustion engine vehicles, discourage walking and cycling – active travel.⁶ This has major public health consequences, increasing physical inactivity and increasing noise and air pollution. There is a reinforcing effect here, where increasing the number of cars decreases active travel, which increases the number of cars.

Energy reclamation schemes (where waste is burned as an energy source instead of going to landfill) are sometimes included within sustainability policies⁷ – but this is controversial.



Energy reclamation facilities emit greenhouse gases and other air pollutants and are often criticised for being sited in areas where people already experience poorer health outcomes.

Almost one third of adults in the West Midlands are physically inactive (*Figure 1*).⁸ Poor air quality can limit the effectiveness of walking and cycling policies, as people (such as those with pre-existing health conditions) may be put off going outdoors in polluted air.⁹

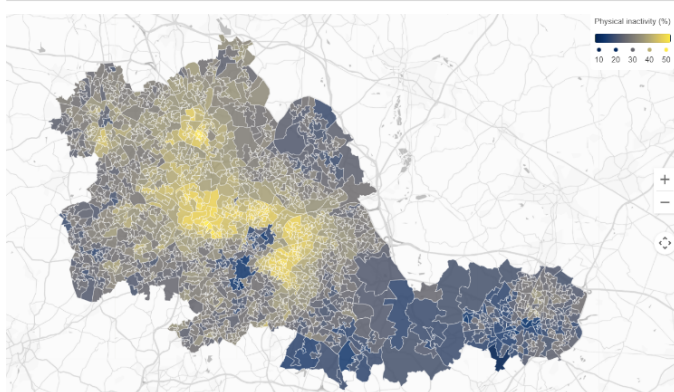


Figure 1: Map shows percentage of adults who are physically inactive in the West Midlands region.

If you are interested in indoor air quality, read our briefing note

[Reducing health risks of gas cooking](#)

Authors and acknowledgements

This briefing note was prepared by Dr Naomi Bennett-Steele on behalf of the WM-Net Zero Study Team.

We are grateful to all local authority officers who participated in the WM-Net Zero Study Participatory Systems Mapping Workshop

Funding and governance

The WM-Net Zero project is supported by Wellcome Trust (227150_Z_23_Z) under the *Advancing climate mitigation policy solutions with health co-benefits in G7 countries* scheme.

Ethical approval for the WM-Net Zero Study was provided by the University of Birmingham Science, Technology, Engineering and Mathematics (STEM) ethics committee (ERN_2468-Apr2024).

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Suggested Citation

Bennett-Steele N, Morris S, Moller S, Hall J, Stocker J, Wang X, Reardon L, Bartington SE, Shi, Z and Penn A (2026). A whole-systems approach to Climate Action, Health and Thriving Communities: Outdoor Air Quality Available online at: <https://doi.org/10.25500/pure.bham.304254686>

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