

Study shows insulating homes contributes most to health benefits of net zero policies in England and Wales

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Implementing net zero policies would result in substantial reductions in mortality by 2050, according to a modeling study published in *The*

Lancet Planetary Health journal.

Results suggest that all policies combined would lead to at least two million additional years lived across the population of England and Wales by 2050. Retrofitting homes would account for 836,000 out of the two million additional years lived, as long as ventilation measures are provided for upgraded homes.

The study measured [health](#) benefits by looking at reductions in mortality alone. However, as well as driving reductions in mortality, evidence from other research suggests that net zero policies may also result in people living with fewer health conditions.

As set out in the Paris Agreement, the UK is legally committed to reducing its [greenhouse gas emissions](#) to net zero by 2050. The UK Climate Change Committee has laid out carbon reduction policies across six sectors to indicate how it will achieve this net zero target. Many of the proposed policies reduce harmful environmental exposures, such as [air pollution](#), and encourage healthy behaviors, such as diet and exercise, but this is the first study to comprehensively model how they will affect health.

Dr. James Milner, London School of Hygiene & Tropical Medicine, UK, says "Our modeling confirms that there are significant health benefits to implementing net zero policies. Not only are these policies essential for mitigating climate change, they also make us healthier. If we move faster in adopting more environmentally friendly diets and active ways of traveling, the health benefits will be even greater."

He adds, "The central role played by retrofitting homes with insulation in delivering these health benefits is particularly striking. Housing in England and Wales is poorly insulated compared to other countries, so actions taken towards improving home [energy efficiency](#) prove

particularly beneficial to reducing carbon emissions and improving health. The energy and cost-of-living crises this winter have provided a long list of reasons for the UK to adopt an ambitious insulation [policy](#); our study adds better health to that list."

The study looked at six net zero policies across four different sectors ([electricity supply](#), transport, housing, and food). It used modeling to estimate how these policies affect health, taking into account how much they reduce air pollution, make diets healthier and increase exercise. The study considered two different scenarios; a Balanced Pathway in which a 60% reduction in emissions was achieved by 2035 and a Widespread Engagement Pathway in which consumer behavior changed more rapidly with regards to diet and travel choices. It measured the policies' impact on health by looking at the number of additional years people would live across the whole population (given in life-years).

The results suggested that, under the balanced pathway, retrofitting homes with insulation resulted in 836,000 life-years gained by 2050, driving the largest benefit to health.

This was followed by switching to renewable energy to power homes and reducing red meat consumption—which resulted in 657,000 and 412,000 life-years gained, respectively.

Subsequently, replacing car journeys with walking or cycling resulted in 125,000 life-years gained, while switching to renewable energy for electricity generation resulted in 46,000 life-years gained, and finally switching to [renewable energy](#) for transport led to 30,000 life-years gained.

In total, the Balanced Pathway led to two million additional years lived across the population of England and Wales by 2050. The health benefits were greater under the Widespread Engagement Pathway, amounting to

nearly two and a half million life-years gained by 2050.

The authors measured reductions of mortality by calculating the total additional years lived across the whole population. However, in practice, mortality might be reduced more among some groups of the population than others. For example, men are more likely to use active modes of transport and younger people and women are more likely to reduce red meat intake in favor of a more [plant-based diet](#).

The authors note some limitations of their study. The modeling is inevitably based on various assumptions, which may impact the accuracy of the estimates. However, the authors believe their study is likely to underestimate the health benefits of net zero policies, as they were unable to model all the potential [health benefits](#) (for instance, reductions in agricultural air pollution and reductions in nitrogen dioxide pollution from transport). In addition, they were unable to capture the benefits of other countries implementing their net zero policies on the population of England and Wales, which is likely to reduce the air pollution traveling across from continental Europe.

More information: Impact on mortality of pathways to net zero greenhouse gas emissions in England and Wales: a multisectoral modelling study, *The Lancet Planetary Health* (2023).

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