

Heating only one room could be key to lowering home working emissions

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People who work from home and heat more than one room will prompt significantly higher carbon emissions than those who work in an office, new research from the University of Sussex Business School has found.

The researchers are calling on home-workers only to heat the rooms they need, and on governments to help people live in more energy efficient homes.

In a new study published in *Energy and Buildings*, the Sussex researchers analyzed recent data of more than 400,000 dwellings in England, examining the carbon emissions associated with different patterns of home working, including variations in heating use and whether workers chose to heat their entire house or just one room.

The study found that homeworkers who heated only one room for one hour to 19°C saw an increase in carbon emissions which was limited to 16% relative to those who work in an office. Those who heated their entire home for three hours a day saw emissions 117% higher than those who work in traditional settings, like offices.

The researchers also compared this data with their previous study to analyze whether the average homeworker has lower transport carbon emissions than those who don't work from home at all. Using data from the English National Travel Survey, they found that even when transport is considered, working from home three to five days a week still increased [carbon](#) emissions by 24%–30%, relative to conventional working patterns such as office-working.

In their new paper, the researchers emphasize the importance of a nationwide decarbonization policy, including the installation of heat pumps and home insulation and the use of green energy.

Lead author, Yao Shi, a research student in the University of Sussex Business School, said, "The findings in this study also run counter to the common expectation that home-working reduces energy use and [carbon emissions](#) with our results strongly suggesting that, counter-intuitively, home working has achieved little to no emission savings in England in

the recent past.

"COVID lockdowns triggered a major culture shift with a [growing population](#) now regularly working from home and reaping benefits in terms of work-life balance and time spent with family members. In light of this, we think the government needs to consider home-workers' extra energy expenditure.

"The findings raise a question of whether home-workers will now need more support for their energy bills, such as tax reduction and [energy vouchers](#). The findings also support calls for better home insulation and improvement in [heating systems](#) such as [heat pumps](#) if homeworking is to be sustainable."

More information: Yao Shi et al, The impact of teleworking on domestic energy use and carbon emissions: An assessment for England, *Energy and Buildings* (2023). [DOI: 10.1016/j.enbuild.2023.112996](https://doi.org/10.1016/j.enbuild.2023.112996)

Provided by University of Sussex

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