

MCC Press Release

How governments can incentivise climate protection at home

An MCC-led study sheds light on the impact of various policy instruments on everyday lifestyles. It deals with savings of 350 million tonnes of CO₂ per year worldwide.

Berlin, 27/07/2021. Sensible use of electricity, heating and ventilation: an environmentally conscious energy use within private homes is an important area for climate policy to address. So far, the associated carbon emissions continue to rise on a global scale, despite investments in more efficient household appliances, improved building insulation, and greener electricity generation. But how, and with what prospects of success, can governments influence individual behaviour? The most comprehensive meta-study on this topic to date now sheds light on this. It was conducted by the Berlin-based climate research institute MCC (Mercator Research Institute on Global Commons and Climate Change) and published in the renowned journal *Nature Energy*.

Using machine learning methods, the authors scanned 122 relevant research papers, covering 25 countries around the world, for useful instruments. The focus was on incentives to influence everyday behaviour based on available devices. "According to our impact analysis, comprehensive application of such instruments could avoid 350 million tonnes of CO₂ emissions per year worldwide in the short term" reports [Tarun Khanna](#), postdoc in the MCC working group Applied Sustainability Science, and lead author of the paper. While this potential represents only about 6 per cent of emissions attributable to housing, it is relevant: "Global climate policy must rapidly push energy demand in buildings towards zero," Khanna emphasises. "So we need both energy transition on the supply side and responsible energy use on the demand side."

According to the study, monetary incentives are most effective in inducing energy-saving behaviour. For example, time-dependent electricity tariffs not only help avoid the need for fossil energy sources to cover peak load demands but are also effective in reducing overall energy consumption. Measures that inform the population, and feedback instruments, such as providing in-home displays that show the current energy consumption, also work relatively well. Playful motivational actions, such as special apps or competitions, as well as incentives based on comparable households ("Home energy reports") have a comparatively smaller, but still significant effect.

The findings on the policy mix are also informative: that is, the extent to which the state can enhance the effect of instruments by combining them in a specific way. Thanks to the large number of individual studies, the meta-analysis can provide empirically supported indications towards this. It shows that it is particularly

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beneficial to stimulate energy saving in private households by combining financial incentives with feedback tools and social comparison.

"Such measures are important to ensure climate-friendly development" explains [Jan Minx](#), working group leader at MCC and a co-author of the study. "In many scientific future scenarios, the temperature targets of the Paris Agreement will be achieved through rapid decarbonisation of the global energy supply. The prospect of sharply declining carbon emissions in the energy sector becomes more robust if climate policy ventures into the realm of behavioural control at the same time. Here we shed light on the effect of incentives for private households to save energy in everyday life. Incentives for energy-saving investments should then also form part of the bigger picture."

About the MCC

The MCC explores sustainable management as well as the use of common goods such as global environmental systems and social infrastructures against the background of climate change. Our seven working groups are active in the fields of economic growth and development, resources and international trade, cities and infrastructure, governance and scientific policy advice. The MCC was co-founded by the Mercator Foundation and the Potsdam Institute for Climate Impact Research (PIK).

Reference of the cited article:

Khanna, T., Baiocchi, G., Callaghan, M., Creutzig, F., Guias, H., Haddaway, N., Hirth, L., Javaid, A., Koch, N., Laukemper, S., Löschel, A., Zamora, M., Minx, J., 2021, A multi-country meta-analysis on the role of behavioral change in reducing energy consumption and CO₂ emissions in residential buildings, *Nature Energy*

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