

Why public policy must adjust to new energy source preference

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Support for renewable energy sources such as solar and wind is linked to a belief that climate change will be catastrophic, while supporters of nuclear power tend to be less concerned about climate risks, says a study

from the Energy Policy Research Group at Cambridge Judge Business School.

The main [low-carbon energy sources](#) available in the U.K. in the battle against [climate](#) change are solar, wind, biomass and nuclear energy, but what sorts of people prefer these different options?

That's the topic of a study [published](#) in the December issue of the journal *Energy*, which finds that people's preferred energy source is related to respondents' views on the anticipated impact of climate change.

Specifically, people who believe that climate change will be catastrophic tend to prefer renewable energy sources such as solar and wind, while those less concerned about climate change are more favorable towards nuclear power. The study also finds that people prefer energy sources about which they are more knowledgeable or familiar.

How gender, education and politics influence energy preferences

Among other findings:

- Men are more likely to prefer solar, wind and nuclear energy, while women prefer biomass energy, although the gender effect is, by far, strongest for nuclear power. Women are much less positive about using [nuclear power](#).
- Individuals with a higher level of scientific education are more likely to prefer [solar energy](#).
- Those with more right-wing political orientation tend to prefer biomass and nuclear especially, but there was no relationship found between ideology and wind or solar.

The study, titled "Determinants of public preferences on [low-carbon](#) energy sources: Evidence from the United Kingdom," was co-authored by Juyong Lee of the Energy Policy Research Group (EPRG) at Cambridge Judge and Changwon National University in Korea, and by David Reiner, Professor of Technology Policy at Cambridge Judge Business School and Assistant Director of EPRG.

The study's results highlight the importance of adjusting energy transition policies to take into account people's acceptance of low-carbon energy sources.

Why policy must examine preferences of key demographic groups

"It's not sufficient to provide a composite view of how the public view low-carbon energy sources," says co-author David Reiner. "It's important to consider public awareness and preference of specific energy sources and technologies, particularly among certain demographic groups.

"The challenge of addressing climate change is daunting and will involve every sector and every individual and will likely require every option available. It is also important to clarify certain misperceptions—for example, we do not find that older or more conservative people are any less supportive of renewables such as wind or solar than younger or more liberal individuals. We hope these findings will help inform [government policy](#)."

The study describes how decarbonizing the electric power sector is a key first step in achieving the goals of the 2015 Paris Agreement on climate change adopted by 196 Parties at the UN Climate Change Conference (COP21); the U.K. has been a leader in reducing its proportion of coal-generated power generation to single-digit percentages, and the UK's

ambitions have equalled or exceeded the EU's since Brexit.

While some previous studies have shown a strong link between public trust in government [policy](#) and public acceptance of low-carbon energy sources, the new study found that only support for biomass energy increases along with public trust in government policy on climate change.

"On the other hand, respondents who prefer solar and wind energy tend to view companies rather than government as playing a more significant role in addressing climate change," the paper says.

Risks but not trust in government influence solar and wind preferences

"Thus, [public trust](#) in the government's climate change response policies was not a significant determinant of preferences for any low-carbon energy sources apart from biomass energy. Taken together with these findings, we find public perceptions of potential risks of climate change but not trust in government policy has a significant effect on preferences for solar and wind energy."

While some studies in other countries have found that younger people prefer renewable energy (as in Finland) or that older people prefer renewable energy (in Australia), the new study found no relationship between energy preference and age or U.K. region.

Study methodology

The study's dataset is based on an online survey of environmental attitudes in the U.K. conducted in 2021 by pollsters YouGov, based on a representative sample of the U.K. population. They explored four types

of candidate variables: demographic, knowledge, perception, or policy.

The knowledge variable is based on respondents' background knowledge on how energy is produced, delivered, and used and whether they are familiar with specific energy sources or low-carbon technologies such as carbon capture and storage. The perception variables reflect the priority placed on climate change and whether respondents consider climate change as the most important environmental problem facing the U.K. The policy variables include whether respondents are optimistic about the U.K. government's environmental and energy policies, and whether they think that low-carbon energy sources should be the top priority in future energy policy.

Further findings:

- Solar energy: Those with a greater preference for solar tend to be more knowledgeable about renewables such as solar and wind energy, but knowledge of other low-carbon energy options has no significant effect.
- Wind energy: Supporters were found to have a relatively high level of knowledge about wind energy, perceived climate change as one of the most critical issues currently facing the UK, and recognized the potential impacts of climate change as dangerous.
- Biomass energy: Those with a greater preference for biomass energy tend to believe that the government can do a great deal to address climate change problems and that [renewable energy sources](#) should be the top priority for government investment.
- Nuclear energy: Supporters are more likely to be knowledgeable about nuclear energy and energy in general and think that government investment in [nuclear energy](#) should be the top priority to solve climate change. They believe that their daily lives are not significantly affected by climate change.

In conclusion, the authors say the study "demonstrates the need for new approaches and strategies to increase the acceptance of low-carbon energy sources as part of any future energy transition."

"Given that the government's low-carbon energy policies and public perceptions of climate change were found to have a significant effect on preferences for low-carbon [energy sources](#), policies for the energy transition need to be adjusted to better reflect what drives public acceptance. Thus, it is necessary to consider energy transition-related policies alongside public information campaigns and programs aimed at wider public education.

"Apart from incentives for low-carbon electricity, it is also necessary to identify ways to secure policy support considering the characteristics of each [energy](#) source and expand public awareness of [climate change](#) and individual technologies."

More information: Juyong Lee et al, Determinants of public preferences on low-carbon energy sources: Evidence from the United Kingdom, *Energy* (2023). [DOI: 10.1016/j.energy.2023.128704](https://doi.org/10.1016/j.energy.2023.128704)

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