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Determinants of public preferences on low carbon electricity: Evidence from the United Kingdom

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Abstract

We empirically derive the determinants of British public preferences for different low-carbon energy sources using machine learning algorithm-based variable selection methods (ridge, lasso, and elastic net regression models). We seek to understand the drivers of support for solar, wind, biomass, and nuclear energy, which are the largest low-carbon energy sources and together account for the majority of UK power generation. Explanatory variables examined include those related to demographics, knowledge, perceptions of climate change, and government policy. We carry out a comparative study by synthesising the results of our independent analyses for each energy source and find that the preferred energy sources vary with respondents' views on anticipated climate change impacts. Those who believe that potential effects of climate change will be catastrophic tend to prefer renewable energy sources whereas those less concerned about climate change tend to prefer nuclear power. The public also prefer energy sources about which they are more familiar or knowledgeable.

Keywords low carbon energy ; variable selection models ; energy mix; public trust; climate change perceptions; nuclear power; renewables

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