

# A comparison of public preferences for different low-carbon energy technologies: the case of CCS, nuclear and wind in the United Kingdom

EPRG Working Paper 1810

Cambridge Working Paper in Economics 1826

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We commissioned and analysed a representative national survey of the British public to investigate public attitudes towards different low-carbon technologies (carbon capture and storage (CCS), wind and nuclear power) and the factors influencing public support. Each of these technologies has a different risk profile and hence will have different determinants that will explain public preferences for each technology. Wind is viewed by the public as a relatively low-risk technology, whereas nuclear energy is thought of as a higher-risk technology. CCS is also viewed as having potential risks, but respondents are much less familiar with CCS than wind or nuclear power and so are less likely to have strong preferences. Of the three, unsurprisingly, wind energy is, by far, the preferred technology for mitigating climate change supported by over 74% of respondents compared to 43% for nuclear energy, and 33% for CCS.

Trust in the information provided by environmental protection organizations and energy companies on energy-related issues was significant but had the opposite relationship with public support for nuclear and wind energy. Respondents who trust environmental NGOs are more inclined to support wind energy and more inclined to oppose nuclear, and both results are significant at the 1% level.

Perceived cost and objective knowledge were found to influence support for all three technologies. The perceived effects of low-carbon technologies on energy bills significantly influenced public support: when people believed that low-carbon energy technologies would increase their energy bills, they preferred not to support them (significant at the 1% level). Objective knowledge was directly and positively related with support for low-carbon energy technologies.

Our model also shows that respondents' political party affiliation affects public support for wind energy: Liberal Democrat supporters were more likely to support wind than supporters of the Labour Party and Conservatives are less likely to support wind energy than Labour Party supporters, which broadly corresponds to the individual parties' positions on low-carbon energy development.

Environmental attitudes were anticipated to be an important factor, since it was expected that those who are more concerned about the environment would exhibit greater support for environmentally friendly and low-carbon energy technologies. However, our findings do not support this hypothesis and, insofar as there were significant results, actually worked in the opposite direction. Among the three questions about environmental attitudes, only one showed a weak significance level of 5% for CCS. Unlike nuclear and wind, CCS only has a rationale as a climate solution, nevertheless, those who believed that the environment is one of the most important issues facing the country were actually less willing to support CCS.

On the other hand, those who believe that climate change is such a serious problem that immediate action is needed do exhibit a strong preference for wind power whereas support for action on climate change was negatively correlated with support for nuclear power. Both the CCS-environment and nuclear-climate findings likely reflect the fact that the strongest advocates of environmental and climate action far prefer renewables to the other options.

By contrast, people who agree that science and technology are making our lives better are more willing to support CCS and nuclear, and both findings were significant at the 1% level. This may be because these technologies, especially CCS, are perceived as relatively new and advanced energy technologies.

Demographic factors played a more important role in models of support for nuclear energy more than the two other energy technologies. Older respondents and those of a higher social grade were more supportive of nuclear power.

However, some factors, including most of the demographic factors tested (e.g., region, education level, income, work organization and employment status) and trust in the UK government, did not affect support for any of the three technologies.

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Publication April 2018  
Financial Support EPRG survey was funded through a grant from the UK Engineering and Physical Sciences Research Council (EP/K000446/1)