Attitudes to Renewable Energy Technologies: A Survey of Irish Households

Sanghamitra Chattopadhyay Mukherjee a, b, , Tensay Hadush Meles a, b, c, Sein Healyd, Robert Mooney d, Lisa Ryan a, b & Lindsay Sharpe e
 Corresponding author: Email address: sanghamitra.chattopadhyaym@ucdconnect.ie
a School of Economics, University College Dublin, Ireland
b Energy Institute, University College Dublin, Ireland
c Department of Economics, Mekelle University, Ethiopia
d Amárach Research, Ireland
e ESB Networks, Ireland

Abstract

The objective of this work is to understand the motivations behind the adoption of several key electricity-using and -generating technologies in Ireland. Technologies that electrify heat and transport such as heat pumps and electric vehicles and non-conventional sources of energy such as solar photovoltaic panels have seen rapid growth in many European countries as a means to combat climate change. However, progress in this regard has been relatively slow in Ireland and we need more data to assess what policies might be needed to encourage uptake. The social research described in this paper is a detailed study of the Irish population, of the barriers and drivers in the uptake of electric vehicles, heat pumps and solar panels from the consumer perspective. Consumer adoption is key to the diffusion of these technologies. This work will help understand the level and timing of likely adoption at scale in the Irish context. A better understanding of potential uptake not only remains a gap for policy-makers in the transition to a low-carbon economy but also for electricity network and system planning in Ireland.

This paper describes several focus groups and in-depth interviews, and analyses a large-scale survey of a nationally representative sample of the Irish adult population. The focus groups provide background information on the public perception of these technologies which allow us to develop the survey questionnaire. The questionnaire is refined using a pilot survey of 50 people, before being administered to 1,208 members of the public. The survey measures a range of demographic and psychographic features in addition to socio-economic and building characteristics, as well as self-reported measures of the likelihood of purchasing these

technologies in the future, allowing us to imagine what path the uptake of these technologies might follow given the status quo and different policy scenarios.

The adopter groups in the survey are clearly innovators, and might not be representative of future adopter groups. However, it is interesting to study the stark differences between innovators and non-adopters, such that potential adopters may be identified for developing future energy policy. In general, adopters tend to be younger, male, employed full time and of higher socio-economic status. They are also more likely to live in relatively new apartment buildings, with higher energy use, of generous size, with capacity for large families. Adopters have significantly larger social networks; clearly, word-of-mouth communication matters for technology uptake. Adopters are, in general, more aware of RET, more willing to take risks and try new technology, and keen to see benefits straight away. While non-adopters can be quite pro-environment, adopters are stronger believers that their own decisions influence climate change. Monetary incentives will no doubt be needed to make RET more attractive for resource-poor non-adopters. However, several non-monetary policies such as an expanded public charging network for EVs might work well to ensure new customers see that benefits from uptake pertain to the long term. Moreover, attitudes towards sustainability and the environment are not sufficient predictors of uptake; policies must help translate attitudes into pro-environment behaviour. Many non-adopters prefer to keep using their existing systems due to a lack of understanding of these new technologies and the potential cost-benefit trade-off. Information and awareness raising on specific technologies are, therefore, still needed. Finally, policies must be updated to suit all types of users. For example, current EV owners (almost all with private garages, driveways or parking spaces) mostly charge at home and do not intensively use the public charging network. However, they agree that the network urgently needs upgradation is new customers must be attracted. Similarly, drivers of different driving times, patterns and distances must be made to feel comfortable with their EV purchase decision.

Keywords: Consumer survey, technology adoption, heat pumps, solar PV, electric vehicles, Irish households

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