

Mandatory vs Voluntary Payment for Green Electricity

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One of the key challenges currently facing the UK is to increase the share of renewable energy in electricity generation in order to meet ambitious energy and environmental targets. Renewable energy sources have a critical role to play in contributing to the diversity, sustainability and security of energy supplies. They are central to meeting the UK government's target of generating 15 per cent of energy from renewables by 2020. Currently only 3 per cent of UK energy and under 7 per cent of UK electricity comes from renewable sources. The Government faces the formidable challenge of delivering a large increase in UK renewable electricity generation if it is to meet its targets. Due to the higher costs and investment involved in developing and applying renewable energy technology, the targets are unrealistic without regulatory support for their uptake. With this background it is particularly important to consider the type of support mechanism that UK households prefer.

This paper uses two self-designed contingent valuation method (CVM) surveys to explore whether the type of payment option has an impact on households' willingness to pay for increasing share of renewable energy in electricity generation.

The research questions addressed by this paper are as below:

- 1) Do UK households prefer voluntary or mandatory support mechanisms for renewable energy? Do these preferences change over time?
- 2) Does willingness to pay differ under a mandatory payment method compared to a voluntary payment option?
- 3) What socio-economic, attitudinal and behavioural characteristics affect WTP for renewables?
- 4) Does the type of payment method have an impact on the certainty of respondents paying their stated WTP?

In order to address these questions, two self-designed surveys were conducted. The first survey was run in October 2008 and a follow up survey was conducted in December 2009. For both surveys, half the sample was asked their valuation of electricity from renewables under a mandatory scheme while the other half of the sample was presented with a voluntary option.

Both the 2008 and 2009 surveys show a high level of support for the voluntary payment option for renewables compared to a mandatory payment scheme. When presented with the choice between the two payment schemes, close to 60 per cent of the surveyed sample stated that they would prefer a voluntary payment version. These preference for a voluntary payment scheme did not change in the course of the year between the two surveys, indicating that the preferences remained stable across this relatively short time frame.

The results from the certainty weighted zero-inflated ordered probit (ZIOP) model indicate that while UK households prefer a voluntary payment mechanism, they are more likely to contribute a positive amount under a mandatory payment method. The results also lead to a surprising conclusion, while households are more likely to contribute monetarily under a mandatory scheme, their willingness to pay is higher under a voluntary payment option.

The structure of the EPRG surveys allows for interacting the respondent's payment method preference and the payment method they were randomly assigned in the survey. The sample can then be split into four groups: those who preferred the mandatory option and received the mandatory option (MM), those who preferred mandatory but were asked their WTP under a voluntary scheme (MV), those who preferred voluntary but were assigned the mandatory payment scheme in the survey (VM) and finally those respondents who stated their preference for voluntary payment and received this option in the survey (VV).

Again utilizing the certainty weighted ZIOP model the effect of these groupings on respondents' WTP for renewables was assessed. The results indicate that compared to the MM group all the other three groups have a lower willingness to pay.

The final research question addressed by this paper is on whether the payment vehicle has an impact on certainty expressed by respondents of actually paying their stated WTP in real life. The results indicate that compared to the MM group, VM and VV groups had a lower level of certainty in their stated WTP. Thus, the respondents who stated they preferred a voluntary payment option had less certainty of paying their stated WTP.

The primary objective of this paper has been to investigate payment method effects on WTP for renewables and the certainty expressed by UK households in actually paying their stated valuations. The findings presented in the previous section present a mixed picture. While UK households prefer a voluntary payment scheme to support renewables, they are more likely to contribute under a mandatory scheme as well as being more certain of their WTP. However, the amount of monetary contribution is likely to be higher under a voluntary scheme.

The EPRG surveys also reveal the profile for the "green consumer": male, affluent, 25-35 years old, and environmentally conscious. Behaviour of other households is also found to be a significant factor on WTP and certainty of respondents of their WTP valuations.

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