

Estimating Economic Values for a Sustainable Energy Supply: A Case Study in Northern Cyprus 2015

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Abstract

Stated preference techniques are widely used to evaluate an individual's preferences in the context of environmental economics. The aim of this thesis is to explore the use of different stated preference methods to estimate willingness to pay (WTP) for micro-generation solar systems. The case study setting is North Cyprus. Households' preferences and choices for generating electricity on their premises were assessed using contingent valuation (CV) and choice experiments (CE's).

CV was employed to estimate individuals' WTP for micro-generation solar technology, and also willingness to accept (WTA) compensation for loss of amenity and feed-in tariff. The data comprised a survey of 369 individuals through the face-to-face interviews. The survey was split between two separate CV experiments, one using open-ended questions, and the other in the double-bounded format. A Becker-DeGroot-Marschak (BDM) incentive compatible experimental approach was adopted with a cheap-talk to reduce strategic behaviour and hypothetical biases.

Additionally, a CE survey of 205 respondents was carried out to evaluate the attributes that influence respondents' choices in the adoption of micro-generation solar panels. The attributes comprised a government subsidy, feed-in tariff, investment cost, energy savings, and the space required for installation. Respondents were asked to choose their most preferred alternative from two hypothetical scenarios of attributes and the status quo (do nothing).

One of the important findings of this thesis is the significance of the suggested experimental approach, which enabled the convergence of WTA/WTP values. The contribution of this thesis relies on the use of BDM with CV, as well as the CE, to value preferences for micro-generation solar panel adoption. This is the first application of the BDM and CE methods to evaluate solar technology in Northern Cyprus.