Exploring the Application of Conjoint Analysis for Estimating the Value of Non-Energy Impacts

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Abstract

As energy efficiency program spending continues to increase, refining the methodologies used to value associated non-energy impacts (NEIs) has taken on greater interest and importance. This paper discusses limitations of the most widely used approaches to estimate the value of NEIs experienced by program participants and examines an alternative method.

The value of “hard-to-measure” NEIs, such as comfort, are primarily assessed based on feedback from program participants. Virtually all previous studies have either asked respondents to directly estimate their willingness-to-pay (WTP) for NEIs (referred to as contingent valuation), or have used various scaling techniques in which respondents’ WTP is estimated based on their comparison of the value of NEIs to the value of project energy savings. Both approaches possess limitations. Most notably, they require respondents to directly consider the value of NEIs in dollar terms.

Conjoint analysis may be used to address these limitations. Conjoint analysis survey instruments present individuals with hypothetical scenarios that force respondents to make tradeoffs and exercise “real-world” decision-making. WTP for NEIs is then calculated based on respondents’ choices. In addition to providing a more realistic context for respondent preferences than other methods, conjoint analysis yields more comprehensive data on respondent preferences, and it limits the potential for gaming. However, the conjoint method also has limitations.

This paper examines the range of methods for valuing NEIs. Benefits and constraints of each approach are discussed, and results are presented in the context of one program administrator’s multi-year application of these methods. This paper also discusses how best to apply these methods in the future.