



Exploring and Analyzing Relevance and Psychological Drivers of Rebound Effects

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ABSTRACT

Adopting energy efficient products or services is generally regarded as an effective strategy to reduce energy demand. Rebound effects due to changes in behaviour, however, may render observed energy savings lower than those expected from engineering-economic analyses. Scientists generally agree that such rebound effects exist, but their size, relevance and explanation are controversially discussed (Maxwell et al. 2011; Sorrell 2007). While economists point to price and income effects, social or psychological factors have largely been neglected. In this paper, we look at the case of residential lighting. First we identify possible psychological drivers drawing on psychological action theories (Peters et al. 2012). We then combine qualitative and quantitative methods to empirically study the factors driving rebound effects related to lighting in the residential sector in Germany. That is, we first carry out focus-group discussions and then conduct a representative survey (n=6409). In the second study we conceptually and empirically distinguish between rebound effects due to higher brightness and longer burning time of more efficient bulbs. Limiting our analyses for reasons of homogeneity to the replacement of the main bulb in the dining/living room, we find that if the new bulb is more efficient than the old bulb, 57% of respondents chose a brighter bulb and 35 % report to have increased burning time. With regard to psychological factors, the focus groups provide a detailed view of the possible role of attitudes, personal and social as drivers of rebound behaviour. The analyses of the survey data support that re-evaluations as part of attitudinal processes might play a role, however they do not support the influence of norms.

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