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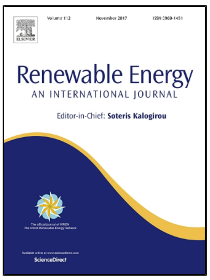

Residential Green Power Demand in the United States

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Abstract

This paper investigates the demand determinants of green power in the U.S. residential sector. The data employed were collected by the National Renewable Energy Laboratory and consist of a cross-section of seven utilities observed over 13 years. A series of tests are performed that resulted in estimating a demand equation using the one-way cross-section random effects model. As expected, we find that demand is highly price inelastic. More interestingly though, is that elasticity with respect to number of customers is 0.52 leading to the conclusion that new subscribers tend to purchase less green power on average than the existing customers. Another compelling finding is that obtaining accreditation will have a 28.5% positive impact on consumption. Knowing that gaining green accreditation is important to the success of programs, utilities may want to seek certification and highlight it in their advertising campaigns.

Keywords: green power; green tariff; voluntary market; renewable energy; price elasticity; panel data

JEL Classification: C33, C51, Q21, Q41

1. Introduction

Driven by a concern for the environment and the dependency on foreign oil supplies, many countries are considering renewable energy as a vital component for reducing greenhouse gas emissions (GHG) and increasing the security of supply. Compared to fossil fuels, renewable energy sources such as wind and solar emit little or no greenhouse gases, and hence benefit the environment by reducing pollution and harmful emissions. The approaches taken to promote renewable electricity have been typically either mandates, market-based incentives, or voluntary