

## **MULTI-PERSPECTIVE EVALUATION OF MARKET EFFECTS AND PROVING LASTING MARKET EFFECTS**

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**Program:** San Diego Gas & Electric (SDG&E) and Pacific Gas & Electric (PG&E) have been implementing Residential Appliance Efficiency Incentive (RAEI) programs focussing on compact fluorescent light bulbs and refrigerators for many years. They recently collaborated on a study to estimate the effect of their programs on the market over time.

**Purpose and Research Questions:** The primary purpose of this study was to assess the extent to which these programs had transformed the residential market for CFLs and energy efficient refrigerators. The study measured a variety of market effects and examined the role the programs played in causing those effects. The study was one of the first of a group of market effects studies done in conjunction with the CADMAC Market Effects Subcommittee in California.

**Methodology:** The study included interviews with manufacturers and retailers to look for evidence of changes in the market. It included surveys of customers in California and in the rest of the country as a control group to gather data for estimating the market share of efficient appliances, to understand the dynamics of the marketplace, to estimate the influence of the programs on customer decisions, and to measure changes in market barriers. The study also included interviews with architects and builders to examine the effect of the programs on the new construction market. The study examined historical program information and data on sales patterns and efficiencies to look for correlations with program activities.

**Fit to Theory and Other Studies:** This evaluation successfully applied, retrospectively, market transformation analysis to programs that were not necessarily designed to transform the market as it is currently thought of. Applying the market transformation metric to resource acquisition programs means the study looked back at programs that were designed to acquire resources and that may have also created market effects.

**Research Findings:** The data collected in this study suggest that the refrigerator programs have successfully created some significant changes in the market for energy efficient refrigerators in the utilities' territories. This is evident both in the market share of energy efficient refrigerators and in the level of several critical barriers in the market. However, there is little evidence to predict whether these effects will prove to be long-lasting. California utility programs have had some significant impacts on the market for CFLs, however the evidence is sparse that these impacts would persist in the absence of continued involvement. The survey data show substantially higher penetration rates and substantially higher purchase rates in 1996 for CFLs in California compared to the rest of the country.

**Problems Encountered and Lessons Learned:** The study examined a wealth of data from many different sources to look for evidence of market effects. As one would expect with this multifaceted or triangulation approach, some of the evidence points to strong conclusions, some contradicts other evidence, and some evidence was too weak to support conclusions. This kind of approach to measuring the impacts of utility programs is, by its very nature, more complex and difficult to follow than many of the approaches that have been used in the past. How the study dealt with this complexity to produce defensible conclusions is one of the key characteristics that sets this study apart. This study produced some significant lessons learned on productive methods for performing this kind of triangulation analysis. The study also demonstrated some of the difficulties inherent in proving that observed market effects will last in the absence of continued market intervention.