

WHICH SWITCH?

CHOOSING BETWEEN SMART THERMOSTATS, SWITCHES, AND ALERTS

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Introduction

Evergreen Economics reviewed three programs designed to reduce energy usage during hot days, in order to understand why program participants chose a specific demand response program offering. These program offerings included a no-cost smart thermostat (i.e. programmable communicating thermostat), a direct load control switch installed on an air conditioning system, and customer email and/or phone alerts to reduce their energy use on event days. These programs are interwoven, with many customers participating in two of the three programs.

Methods

To understand where participants saw value in each program offering, we designed a web survey for current demand response program participants that included a conjoint exercise. A total of 1,070 participants completed the web survey between December 2015 and January 2016, with 492 of those participants also completing the conjoint portion of the survey.

Conjoint analysis is a stated preference technique that has the advantage of presenting several choices simultaneously, thereby forcing the respondent to make tradeoffs between attributes and decide which is the most important to them. In this case, each choice was a demand response program with a unique combination of the following five attributes: bill credits per event, smart thermostat device incentive, event duration and frequency, ability to override events, and notification timing. Respondents were asked to rank 16 different programs (i.e. choices), and then indicate in which of the programs they would actually participate.

Key Findings

An incentive for a no-cost smart thermostat with installation is likely to encourage program participation. This thermostat incentive was consistently one of the most important attributes across all participant groups, ranking higher than the value of bill credits per event.

The ability to override an event is an important driver of participation. This was the third most important attribute in both the program ranking and likelihood of participation. Customers with an AC switch valued the ability to override events lower than participants in the other programs, but still ranked it as one of the top three most important program attributes. The ability to override an event was more important among non-participants in each program, indicating that this may be a barrier for some customers.

Satisfaction rates were higher for participants enrolled in more than one of the three programs. About half of participants enrolled in alerts only (email and/or phone notifications of events) reported being satisfied with the program. This increases to 66 percent among those who also have a program smart thermostat, and to 70 percent for those who also have an AC switch (a direct load control device installed on their AC). Most of the respondents who reported that it was difficult to respond to alerts and reduce their usage did not have a demand response-enabled device and had to find other ways to reduce their consumption during events.

There was no consensus on the best AC cycling option during a 4 to 6 hour demand response event, even within specific programs.

Most respondents from each participant group preferred day-ahead event notifications (68%) to day-of event notifications (11%). This preference was consistent across all programs.