

Abstract #: 506

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Abstract Title: SMUD's Communicating Thermostat Usability Study

Abstract Text:

The goal of this study was to better understand the features that contribute to ease of use and preference for thermostats, and in particular, communicating thermostats. Survey data and video recordings were collected throughout 15 test sessions conducted over the course of 3 days at a focus group facility. During this time, 12 thermostats were tested by 163 participants, evenly distributed by age, education, income, home ownership, and gender. Linear regression models incorporated video-recorded time-on-task values, survey data, indicators for thermostat features, and participant characteristics to determine the following results: Preference scores, based on data collected in surveys, were significantly higher for thermostats with color displays and high overall feel and sound ratings. Of the 12 units tested, the three most preferred thermostats were the Carrier ComfortChoice Touch, Emerson Smart Energy, and Ecobee Smart Si. Efficiency scores, calculated from time-on-task values derived from video recordings, were significantly higher for thermostats with larger screens and higher ease-of-use ratings. The three most efficient thermostats were the Carrier ComfortChoice Touch, the Honeywell FocusPro (one of two non-communicating units tested), and the Emerson Smart Energy. Renters and the elderly took significantly more time to complete common tasks than did younger participants and homeowners. The full report is available on the Publications page at www.herterenergy.com