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**Presentation Title:** How Smart is a Smart Thermostat Without Wi-Fi?

**Abstract:** This paper presents the results of a smart thermostat pilot administered by an investor-owned utility providing direct installation in low income multifamily housing. This was performed at no cost to the apartment management companies. No other measures were provided, allowing for isolation of the effect of the thermostat in regression modeling. The pilot was comprised of 1,000 participant dwelling units and a matched control group of 1,000 non-participant dwelling units.

The paper presents the savings results from installation of this model thermostat, with separate results for households that do not have internet service. This allows for identification of the marginal effects of thermostat features that require Wi-Fi connectivity versus those which are incorporated into the firmware at time-of-sale. The modeling approach uses a control group of low income multifamily housing units that were pre-qualified for the program but did not receive installation, validated based on tests for statistically significant differences in kWh used per day for each month of the 12-month baseline period. The paper also presents the effects of discontinuous occupancy on the savings from thermostats installed in low income multifamily housing, providing an occupancy rate that can be used to scale deemed savings. Other parameters addressed in the analysis include whether the unit is top-floor and building vintage. The analysis incorporates monthly billing reads and interval metered trend data from the thermostats.

Further, this paper presents survey findings detailing usability of the thermostat. This includes features used by those with and without internet service and addressed customer satisfaction with refurbished models.