

Report Assesses the Value of Smart Thermostats in Low-Income Weatherization Programs

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National Consumer Law Center contacts: Jan Kruse (jkruse@nclc.org) (617) 542-8010 or Karen Lusson (klusson@nclc.org) (708) 469-7567.

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The National Consumer Law Center Finds that Customer Behavior is Key to Success

Boston - Smart thermostats are promoted as a measure to produce substantial household energy savings and increased comfort and convenience for residential utility customers, but actual energy savings achieved vary widely, according to a new report by the National Consumer Law Center (NCLC).

“The experience of low-income energy efficiency program administrators interviewed has shown that smart thermostats should not be automatically and widely deployed by low-income weatherization programs,” **said National Consumer Law Center energy and utilities attorney Karen Lusson**, and author of *Smart Thermostats: Assessing Their Value in Low-Income Weatherization Programs*.

Selecting the most appropriate, cost-effective energy efficiency measures to install in low-income homes is important for program administrators, who must maximize energy savings by efficiently investing the government and ratepayer dollars that fund the programs. NCLC’s review of smart thermostat installation data in low-income households in California, Colorado, Illinois, Indiana, Massachusetts, New York, and Oregon revealed significant variances in energy savings tied to occupant behavior, thermostat temperature settings, the type of HVAC system in the home, accompanying customer education, overall customer energy usage levels, and customer demographics.

For example, maximum energy savings from a smart thermostat’s automatic temperature setbacks depend on the customer being frequently and predictably out of the home. This feature will not produce energy savings for a low-income elder who leaves the home only rarely or manually adjusts the thermostat for comfort. Elderly or ill customers who alter a thermostat’s default settings for health reasons can also diminish expected energy savings.

Moreover, the most significant savings estimated for smart thermostats presume broadband wifi in the home as well as access to smartphones or tablets to enable remote interaction with the thermostat. U.S. Census Bureau data shows that, among households with an annual income below \$20,000, a full 40% — more than double the national average and representing 7 million households — have no internet subscription through any mechanism, while more than 25% of all older consumers are without internet access.

Weatherization administrators who were interviewed concur on the need for field specialists to carefully assess each client’s need and the home’s characteristics before choosing which thermostat to install. **Brendan Delaney, technical manager of energy services for Action, Inc.**, a

community action agency in Gloucester, MA that implements low-income energy programs, states that “the conversations by the field specialist with the client are key to determine whether a smart thermostat is both right for the residence and to ensure that savings are achieved.”

Key Findings

Installation of smart thermostats will **not** be cost-efficient nor appropriate in low-income homes unless:

1. broadband wifi exists in the home;
2. clients demonstrate specific interest in advanced thermostat installation;
3. no technical issue arises that would significantly increase labor costs associated with thermostat installations as compared to less advanced thermostat models
4. the client is sufficiently technology savvy;
5. access to critical product education information and troubleshooting is promptly and readily available; and
6. clients spend regular blocks of time outside of the home.