

November 30th, 2009

Katharine Kaplan  
Environmental Protection Agency  
C/o Christina Chang, ICF Consulting  
1725 Eye Street NW, Suite 1000  
Washington, DC 20006

Dear Ms. Kaplan:

Thank you for the opportunity to provide input on the ENERGY STAR Programmable Thermostats Specification. On behalf of the CEE Residential HVAC, Evaluation, and Gas Committees (Committees), please accept the following comments regarding EPA's proposal to revise the ENERGY STAR Thermostats Specification (Specification). The organizations listed at the end of the letter have chosen to indicate their individual support.

These comments represent the informed opinions of our relevant committee members and illustrate the characteristics of an ENERGY STAR Thermostat Program that is likely to be supported by energy efficiency program administrators. Many of the program details ultimately adopted by EPA will require market data and empirical analysis not possessed by CEE. To the extent EPA is able to finalize a specification that incorporates these characteristics by 2011—and is informed by any necessary market research—the Committees support the approach proposed by EPA that would eliminate the need to temporarily suspend the label.

## **ENERGY STAR Identifies Thermostats with Features that Enable Energy Savings**

### **Labeled Products are Significantly Different from Non-Labeled Products**

The Committees support EPA's efforts to ensure that ENERGY STAR is an effective differentiator of the highest performing products in terms of enabling energy savings. Differentiation will ensure the label continues to have value and provide efficiency program administrators with a credible basis for continued promotion of ENERGY STAR-labeled products.

### **Energy Savings Potential is Prioritized in the Specification**

CEE respects and supports all the stated brand tenets of ENERGY STAR. Working within those tenets, the Committees encourage EPA to prioritize the capability to save energy when setting requirements for labeled thermostats that will enable energy saving behavior. The Committees recognize that it may not be possible to set the specification at a level that immediately generates significant energy savings, ensures a very short payback period, and results in 25% of programmable thermostats being labeled as ENERGY STAR. We assume that consumers shopping for a programmable thermostat are motivated to save energy and are searching for a product that enables them to conserve. These consumers may be less concerned with payback period.

One important area to address is setting default temperatures in the specification that will maximize energy savings. While the exact temperatures specified by EPA should be informed by market research on consumer tolerances for temperature and humidity, the proposed defaults appear too high for heating and too low for cooling, thereby decreasing energy savings potential.

### **Labeled Products Appeal to Customers Searching for Solutions to Save Energy in Their Existing HVAC System**

The Committees hypothesizes that the segment of consumers that purchases replacement thermostats at retail offers the largest pool of thermostat purchasers who will be looking for the ENERGY STAR label, and the greatest opportunity for energy savings. Proprietary units installed with new HVAC systems should also be eligible for ENERGY STAR labeling, but we believe the label should be optimized for use on thermostats sold in a retail setting. Therefore, the *no-new-wires* requirement, and other capabilities that enable seamless integration into an existing system are very important and strongly supported by the Committees if technologically feasible and cost-effective.

To better understand the thermostat market, we recommend EPA undertake additional market research (in consultation with industry and other stakeholders)

to assess: 1) how different categories of consumers currently use thermostats, 2) what features consumers desire, and 3) the rate at which each type of consumer would save energy with a thermostat meeting the proposed ENERGY STAR requirements. In addition to informing development of a successful ENERGY STAR Program, CEE members also need this information in order to develop credible estimates of how much energy savings labeled products are likely to achieve.

### **ENERGY STAR Products are “Communication Ready” with Minimal Incremental Cost to Consumers**

The Committees believe there is a small, and growing, number of consumers that would take advantage of communications capability (particularly if EPA could identify currently-available modules that were compatible). Some CEE members running both gas and/or electric efficiency programs would value thermostats that possess the capability to communicate with a home energy management system (EMS). A smaller subset of CEE members implementing load management programs would value thermostats that could communicate with an *Advanced Meter* without necessitating the installation of an after-market component directly on the component. Ideally, both types of communications could be achieved with a single requirement. If that is not possible, the Committees hypothesize that integration with an EMS would currently provide more energy saving potential and value to consumers, and therefore be more appropriate for an ENERGY STAR specification. However, empirical data on this topic is likely needed.

During the EPA web conference on November 18, some manufacturers cautioned that the proposed communication requirements would increase the price of qualified products to consumers while not necessarily providing them with immediate benefit. The Committees believe that EPA’s decision to retain this requirement should be guided by the magnitude of the incremental price to the end consumer for this capability. To assess this question, the Committees recommend that EPA collect data on the publicly available incremental price to the consumer for both “communication ready thermostats” and “communication modules.” If possible, the Committees also request that EPA help inform all stakeholders on this matter by aggregating and sharing this data in a format that is indicative of the market while withholding specific product or manufacturer details.

## Labeled Thermostats Meet *Usability* Requirements That are Technology Neutral

### Experts are Consulted When Developing a *Usability* Benchmark

The Committees believe that a user-friendly interface is one necessary (but not alone sufficient) condition for saving energy with a programmable thermostat. Further, EPA is uniquely positioned to specify *usability* in the market. As a result, the Committees support ENERGY STAR's plans to develop a *usability* benchmark to objectively evaluate whether products that earn the ENERGY STAR label will be easy for consumers to operate.

As the usability benchmark is developed, the Committees suggest EPA and DOE take advantage of expertise outside the energy efficiency community in at least the following areas:

- *Technical communications and the effects of graphics and text on comprehension and retention, and*
  
- *Human-Centered Design Processes for Interactive Systems (ISO 13407).*

### Any Prescriptive Requirements are Temporary

The Committees support technology neutrality in ENERGY STAR specifications, but recognize that until a usability benchmark is developed, interim steps may need to be taken to increase the likelihood of labeled products resulting in energy savings. We recommend EPA critically evaluate the need for—and possible unintended consequences of—prescriptive requirements (e.g., an energy saving “button”) and incorporate less prescriptive wording when possible. For example, using this suggested approach, EPA may conclude that the phrase listed above could be changed from requiring an energy saving “button” to requiring “a mechanism that enables the consumer to enter energy saving mode in one simple step.” To further ensure that ENERGY STAR program requirements are not stifling innovation in the long term, the Committees also recommend EPA eliminates these types of requirements once a usability benchmark becomes available.

Thank you again for the opportunity to comment. Please contact John Taylor, CEE Residential Program Manager, at 617-532-0944 with any questions.

Sincerely,



Marc Hoffman  
Executive Director

## Supporting Organizations

Avista Utilities

Bay State Gas

Berkshire Gas

Black Hills Energy

Commonwealth Edison

Enbridge Gas Distribution

MidAmerican Energy

National Grid USA

New England Gas

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