

November 11, 2011

Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Recently Proposed Changes to ENERGY STAR® Program Requirements
for Residential Climate Controls

Ladies and Gentlemen:

I am writing with regards to recently proposed changes to Draft 2 of the Energy Star® Program Requirements for Residential Climate Controls. More specifically, EcoFactor would like to address the proposed changes regarding communications and remote interfaces.

When work began on the next Energy Star specification for thermostats, reasonably priced and widely available Internet-enabled thermostats were easy to dismiss as a distant pipe dream. Recent introductions of communicating thermostats have made it clear that a robust market for such devices is nearly at hand. Communicating thermostats are now being sold through major consumer electronics retailers, home improvement stores, and alarm service and cable TV providers. They are already being manufactured and sold by multiple vendors, including some at price points below \$100. Some of these thermostats have wireless communications capabilities hardwired; others include upgrade slots that allow future upgradeability.

At the same time, EcoFactor has demonstrated in multiple cities around the country the ability to leverage such communications capabilities to deliver very significant energy savings without asking consumers to give up comfort or control.

We believe that technology has now advanced to the point where it is absolutely appropriate for the EPA to ask: should communications capabilities now be mandatory?

If the purpose of Energy Star specifications is to encourage and reward advanced design and engineering that lead to energy savings, then we believe that it is perfectly appropriate to require as-shipped communications capabilities. Communications enable innovation and iteration in remote user interfaces both before and after a given thermostat is sold and installed. Communications will also, as Draft 2, version 1.0 suggests, “enable groundbreaking applications that take automatic action to increase energy efficiency, decrease energy expense and enable

early detection of HVAC or building envelope faults and deficiencies.” EcoFactor would therefore support a decision to require Energy Star thermostats to offer as-shipped communications capabilities. A non-communicating thermostat is technology fixed in time: to take advantage of new technologies, consumers have to replace the old device with a newer one. Communicating thermostats and remote interfaces can be updated, and can be accessed from smart phones and iPads and future personal communication devices that have not even been conceived yet.

In the event that the EPA does not require as-shipped communications capabilities for Energy Star status, we strongly recommend that the specification retain the communication language in Section 2 of both Draft 1 and Draft 2:

The product must either be (1) a Communicating Climate Control, as defined in Section 1.A above, or be (2) field upgradeable to a Communicating Climate Control by installation of a communication module.

This approach preserves lower-cost up-front options for consumers and manufacturers, but assures an easy upgrade path as the benefits of communications become more widely recognized.

We remain convinced that communications capabilities are the key to realization of substantial untapped energy savings potential in millions of American homes. A perhaps unintentional benefit of the long gestation period for the next thermostat specification is that technology and the market have largely caught up with the forward-looking requirements of the first draft of the specification. We therefore urge the adoption of a final specification that embraces these developments and enables the real benefits of communications capabilities.

We would also like to comment briefly on a few other issues currently being considered.

We believe that measuring humidity at the thermostat does add value for some users, but also understand that adding that capability also increases costs. To the extent that cost reduction drives the specification process, we believe that the benefits of communications will, in the long run, have much greater impact than local humidity measurement will. Indeed, some of the benefits of humidity sensing will be difficult to capture unless communications capabilities are present as well.

We believe that requiring the display of rate information at the thermostat is also likely to offer a poor rate of return for consumers. It will be more effective to enable display of such information on remote interfaces, and to encourage access to and use of such information by remote energy management services that can optimize for dynamic pricing without constant consumer engagement.

Finally, EcoFactor strongly supports allowing streamlined hardware usability requirements for communicating thermostats. We believe that people will use the

interfaces they already associate with the connected world (smart phones, tablets, computers) to do many tasks that today require single-purpose interfaces, such as thermostats. We believe that process will encourage users to accept very simple and inexpensive thermostat interfaces, and can help drive adoption of devices that can leverage the Internet and the rich interface devices people already use. Specifically the EPA has proposed permitting tasks that are extremely challenging with most conventional thermostats, such as setting time and date and adjusting program schedules, to be accomplished with the much richer interfaces most people already have access to. We strongly support this approach, especially since the devices people would use for these tasks are generally already aware of the correct date and time, and automatically adjust for daylight savings time, etc.

Respectfully,

John Steinberg
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