

**Comments on EPA ENERGY STAR® Program Requirements Product Specifications for Residential Refrigerators and Freezers  
(Eligibility Criteria, Draft 2, Version 5.0)**

The following comments are provided to the Environmental Protection Agency (EPA) by the Electric Power Research Institute (EPRI) in response to the EPA's solicitation of stakeholder feedback regarding the draft "*ENERGY STAR® Program Requirements, Product Specification for Residential Refrigerators and Freezers, Eligibility Criteria Draft 2 Version 5.0*". EPRI appreciates the continued opportunity to be involved in this important body of work and to provide comments.

EPRI's review of this draft version was again limited to the technical aspects. The perspective shared is based on extensive work with utilities in the areas of energy efficiency and demand response. The comments herein are presented topically, with references to multiple locations in the Draft noted as needed.

## **Comments Regarding Diverse Types of DR Programs**

EPRI appreciates enhancements in this revision that clarify that the TALR and DAL are merely examples (of minimum functional requirements) and that the degree of energy reduction and durations listed are also examples of minimum capability requirements.

EPRI continues to encourage the use of language that makes it clear to appliance makers that DR programs and the fundamental grid needs from which they are derived, are both diverse and evolving, and that the ability to receive and respond to a wide range of indicators of grid needs will be beneficial.

As an example of additional signals that connected appliances could respond to, EPRI would suggest price, or more specifically a “relative energy price”. This would enable appliances to be responsive in TOU, CPP and other rate-based programs, in addition to the direct load control programs that might be supported by TALR and DAL.

## **Comments Regarding Delay Defrost Capability, Lines 227-253**

EPRI believes that the inclusion of this timer-based “delay defrost capability” can be highly beneficial. As written, it allows consumers to align the settings with their local TOU schedules, while at the same time providing for out-of-the-box default settings designed to provide immediate grid benefits in all regions.

EPRI regards as advancements the Draft 2 additions which include both morning (winter peaking) and evening (summer peaking) delay periods. This should support appropriate device behavior in diverse regions and enhanced grid benefit in all regions as a result. EPRI would also regard the suggested alternative in lines 248 to 251 (to define a single overnight window for defrosting) as an advancement, and is neutral to the two approaches.

## **Comments Regarding Remote Management, Lines 190-193**

EPRI does not understand the rationale for listing of “remote management” in the context of connected appliance criteria for EPA/EnergyStar. It would seem that appliance makers have always been able to freely choose to offer (or not offer) remote management capability, and since there is no apparent energy efficiency or demand response effect involved, it seems out of place to list it as a requirement here.

## **Comments Regarding Communications, Section D, Beginning Line 346**

EPRI recommends a single uniform communication specification, such that the communications capabilities described in sub-section (b), beginning line 354, may apply to both HEM and DR uses, such that lines 348 to 352 are eliminated. In such a case, the provision for “open access” as described in sub-section (c) may still apply, in order to allow for the exchange of vendor-specific information for which there is no standard.

The rationale for this recommendation is twofold:

First, both sections already offer manufacturers the choices of:

1. Built-in communication technology
2. Modular communication, shipped with the product
3. Modular communication, provided at the time of sale

Sub-section (b) only adds more options for manufacturers, without removing any of the three above, and is therefore less restrictive. The added options include the use of an open-standard modular interface.

Second, it is recognized that in any case, consumers do not get HEM functionality, without the purchase of additional equipment. In other words, requiring that a communication technology be included in the box at the time of purchase is not sufficient to provide HEM functionality. It provides a communication conduit, but it is a conduit that leads nowhere unless or until a consumer makes an additional purchase. Given this, it would seem that the additional option provided in section b (a modular interface based on an open standard) may be of interest to some manufacturers for HEMS purposes also, and could serve to increase the likelihood of consumer's actually acquiring HEM functionality as a result of improved network flexibility, and compatibility with existing or third party networks such as home automation, home entertainment, security systems.

### **Comments on Lines 358 through 361**

EPRI recommends that this communication option be listed alongside the other options, rather than being identified as an "exception".

### **Comments Regarding the Requirement for Communication Standards**

EPRI applauds the attention EPA has provided to the value of standards in regard to communication interfaces. The employment of standards generally fosters interoperability and market competition, leading to greater satisfaction and value for consumers.

The present draft (beginning at line 373) recommends that all layers of the communication systems employ standards. However it only requires standards when the manufacturer chooses to use a standard modular communication interface.

EPRI recommends that the same standards requirements apply to the communication related to participation in demand response programs, regardless of which option the appliance maker chooses (e.g. built-in, in the box, provided at the time of purchase).

### **Comments Regarding Optional Verification of Demand Response**

Note: If HEM and DR communication requirements are combined as recommended previously, this comment is rendered moot.

EPRI notes that at the present time, eligibility for some utility demand response programs is dependent on the ability to verify that the end-device provided a certain response. In view of this, EPRI would suggest language or notation that makes it clear to appliance makers that such verification may be required. There are presently two types of information identified in the HEM section of the document that would be useful for this purpose: energy consumption information and demand response status. With consumer approval, these quantities could be made available along with the DR communications, thereby expanding the number and type of DR programs for which a product may be eligible.

EPRI supports the consumer privacy and control principles that are incorporated into the Draft, and believes that the optional provisioning of verification information would expand consumer opportunity while remaining consistent with privacy principles. Standards exist for exchange of simple metering and status information sufficient for verification of DR program participation.

### **Comments Regarding Customer Override**

As an extension to the previous comment, product manufacturers should be aware that eligibility for some demand response programs may require reporting of customer overrides. With consumer approval, override status could be made available as an element of the “demand response status” identified in lines 197 and 198. Furthermore, customers could have the option of turning off override capability if they so choose to agree up-front with their utility, third party DR aggregator, or other provider to not exercise this capability (e.g., in exchange for greater incentive levels or to qualify for programs/rewards requiring such).