

October 12, 2012

Amanda Stevens  
US Environmental Protection Agency  
Ariel Rios Building 6202J  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Dear Ms. Stevens:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the *ENERGY STAR® Draft 3 Version 5.0 of the Residential Refrigerator Specification*, released by the US Environmental Protection Agency (EPA) on September 6, 2012.

CEE is the binational organization of energy efficiency program administrators and a staunch supporter of the ENERGY STAR® Program. CEE members are responsible for ratepayer-funded efficiency programs in 45 US states and eight Canadian provinces. In 2011, CEE members directed over \$7.8 billion of energy efficiency program budgets in the two countries. CEE's Members work to strengthen ENERGY STAR as a platform for energy efficiency across North America.

CEE highly values the role ENERGY STAR plays in differentiating energy efficient products and services that the CEE membership supports locally throughout the US and Canada. We appreciate the opportunity to provide these comments.

## **Articulate the ENERGY STAR Vision for “Connected”**

Because the introduction of “connected” represents a significant program-wide development and potentially a fundamental change to the program, CEE recommends that EPA articulate its vision for “connected” to all stakeholders potentially affected. In order to establish the confidence of program administrators and ultimately justify rate payer funds for promotion, CEE recommends that a rollout and management plan (or its equivalent) be provided, in which the fundamental purpose of this new program element is identified. CEE fears that the absence of such a plan may create an unstable basis for this element to succeed. CEE requests that EPA work with all potentially affected stakeholders to flesh out the plan (i.e. vision) for the portfolio of ENERGY STAR product categories that are expected to incorporate a “connected” element. A

clear articulation of EPA’s vision will help program administrators fully understand the strategic direction of the Program, and ultimately help grow the equity of ENERGY STAR.

Further, market research on how “connected” is perceived by consumers would also help inform program design, assist in managing consumer expectations, and protect the integrity of the brand.

## **CEE Comments on “Connected” Criteria**

Since 2011, CEE has been actively engaged with EPA and manufacturers to assess the market conditions and specification requirements that would be necessary for the ENERGY STAR Program to successfully address “connected.” Please find our specific comments below.

### **Continue to Deliver Cost-Effective Energy Savings to Consumers**

CEE stands committed to assist in supporting the incorporation of “connected” functionality into the ENERGY STAR Program while working to ensure that the Program continues to represent the core tenet of cost-effective energy savings to consumers. We have previously requested a basis to justify a 5% credit for “connected” appliances and expressed concern about compromising measurable energy efficiency benefits. As EPA moves forward with a temporary credit (pending completion of the DOE test procedure), we believe that ENERGY STAR products must continue to represent cost-effective energy savings independent of the potential benefits of connectivity, and are pleased to see EPA’s affirmation of this point.

### **We Applaud EPA’s Commitment to Open, Non-Proprietary Communications**

CEE applauds EPA’s proposal to disallow architectures that do not provide an open, non-proprietary means of achieving grid connectedness with the appliance within the bounds of the customer’s premises via interoperability with open standard peripherals and applications. A number of communication technologies and protocols are presently used by consumers depending on available infrastructure and regulatory environments. Maintaining an appropriate focus on openness, function, and communication technology neutrality will allow EPA to define the salient objectives of a “connected” architecture for appliance integration, while avoiding conflicts with the efforts of standards bodies to develop, validate and ratify the evolving portfolio of intelligent grid communications topologies. These bodies include the Institute of Electrical and Electronics Engineers, Society of Automobile Engineers, American Society of Heating, Refrigeration Air-Conditioning Engineers, Consumer Electronics Association, American Society for Testing and Materials, National Institute of Standards and Technology as well as others. We encourage EPA to keep this high-level principle in mind as it develops tight language to ensure open non-proprietary communication.

Such an approach, coupled with the assurance that all communication pathways will be supported by a “connected” product, will ensure that the customer has the ability, and flexibility, to choose how their appliances are connected in the future, and will also avoid any onus on the customer to purchase ancillary devices to fully enable two-way connectedness. EPA’s proposal appears to provide the flexibility necessary to allow appliance manufacturers, utilities, and other efficiency and demand response program administrators to support customers’ needs. We note the following additional observations:

- While customer-supplied broadband may be a viable way to achieve connectedness within a customer’s home, we note that there remains a significant number of customers nationally who do not have broadband and/or wireless access. Furthermore, there are customers who may not be willing to support the use of their broadband connection by the utility or appliance manufacturers. Given that the ENERGY STAR Program is a mass market program, we recommend that a “connected” appliance be equipped to communicate via all major communication pathways so as not to inadvertently preclude or limit market development and participation in potential utility programs. Requiring a standardized modular port is another option that would address the fact that program administrators operating under diverse sets of conditions (regulatory, terrain, customer density, asset life cycle) are likely to use a variety of communication technologies to reach devices for demand response, energy efficiency, and other amenity afforded by “connected.” A modular approach that is based on an open standard is one option to address this diversity and provide consumers with flexibility
- If in the future, utilities and other third parties are required to interface with each manufacturer’s cloud-based solution, this requirement is likely to result in added cost and complexity. This, in turn, could impact the cost effectiveness of demand response and energy efficiency programs which would ultimately impact customers’ ability to take advantage of appliance “connectedness”.
- Cloud-based solutions could compromise customer data privacy and security due to the introduction of a third party into the flow of customer data and appliance control. Cloud based solutions that involve proprietary, non-open interfaces at the appliance are not necessarily the customers preference. Such an arrangement unnecessarily inserts a third-party into the demand-response/energy efficiency path, possibly adding cost that directly reduces the consumer’s incentive to participate.
- Requiring that the appliances communicate in an open, non proprietary manner from within the customer’s premises provides the customer with the ability to choose who “manages” their appliances in the future. For example, a customer may choose to pay their local cable company to, in addition to managing cable broadcast recordings, manage when their appliances consume energy based on their current rate structure. However, a few months later, that same customer may decide to allow their security system provider

to manage their appliance energy consumption along with their security settings and lighting to maximize savings and comfort. Open access would help ensure that the customer is afforded the ability to choose which offer to participate in based on her own needs and wants.

While we believe that an open, non-proprietary means for achieving two way connectedness with the appliances within the bounds of the customer's premises should be a base requirement for obtaining "connected" certification, CEE supports alternative means as long as these are supported in addition to those that ensure that the customer has the ultimate say and that emerging communication pathways are not squelched.

## Opportunity Exists to Clarify Language Related to Open Standards

Some specification language could be perceived as contradictory and merits clarification. Specifically Note 1 (line 187-89)<sup>1</sup> mentions the "internet/cloud" as an option to achieve open standards-based communication" This is inconsistent with line 230<sup>2</sup>. We recommend changing this language to ensure clarity about the need for translation to occur within the premises of the home. Further, in section 4C (line 313-15) EPA states that "...to enable interconnection with the product, an interface specification, API or similar documentation shall be made available to interested parties." We interpret this provision to apply only to aspects of "connected" for which no open standards currently exist. However, this language could be perceived by other readers as an alternative to open, standards-based communication since API's are often associated with proprietary communication. CEE recommends that EPA clarify that a vendor-provided API is not a viable alternative to the use of open standards-based communication to achieve interoperability.

---

<sup>1</sup> "Communication device(s), link(s) and/or processing that enables open standards-based communication between the Connected R/F System and Energy Management Device/Application(s). These elements could be within the base appliance, and/or an external communication module, a hub/gateway, or in the Internet/cloud.

<sup>2</sup> At a minimum, receive and directly respond to open standards-based signals from a utility or another 3rd party service provider, without having to depend on a service supplied by the product's manufacturer via the Internet/cloud

## Additional Measures are Necessary to Minimize Risk to the ENERGY STAR Brand

CEE members who promote ENERGY STAR are driven by a desire to ensure, to the best of their ability, that the customer has a positive experience following an investment in an ENERGY STAR appliance. If a customer chooses to purchase a “connected” appliance because it was endorsed by ENERGY STAR, but ultimately is disappointed with the “connected” functionality, how will EPA mitigate the possibility that both ENERGY STAR and the organizations that promote ENERGY STAR would be subject to a negative backlash? This is particularly challenging given that much of the amenity that is expected to stem from “connected” is unproven. Significant areas of concern that we believe merit additional specification language include: demarcation between the manufacturer and retailer claims regarding “connected” and the energy performance attributed to ENERGY STAR, the minimum testing for the energy and demand performance of “connected,” and managing potential consumer dissatisfaction due to the inability to immediately participate in a local utility program.

We support the use of a DOE test procedure (as the legal basis for making representations of energy performance) that includes all energy related aspects specified within “connected”. Further, we support having the minimum functionality that would enable the appliance to participate in a DR or IDSM (integrated demand side management) program to be specified and then verified for inclusion in the ENERGY STAR Program.

EPA has indicated that it will rely on a review of product literature and physical equipment inspections for the required specifications for “connected” that are not related to demand response. Therefore, EPA will be relying on claims by manufacturers, as opposed to testing, for some aspects of what the consumer may associate with a “connected” product. We believe that this strategy may be inadequate but at a minimum, additional planning and safeguards could help mitigate potential negative consequences. One risk mitigation approach to protect the integrity of ENERGY STAR as this new element of the Program is introduced would be to expressly prohibit manufacturer and retailer statements of association between “connected” features and the ENERGY STAR program. Messaging would be limited to the ENERGY STAR website by EPA until the brand effect of this program element is known. Any assertion by manufacturers or retailers that suggested an ENERGY STAR endorsement of “connected” could be grounds for dismissal of the product from the Program. Consultation with FTC regarding the logic and possible expansion of their new *Green Guidelines* to cover “connected” may also prove useful.

To mitigate potential consumer confusion and/or dissatisfaction, we recommend that EPA develop a communications strategy to disclose what EPA has done — and more importantly what it has not done — to allow a product to be listed as “connected” on the ENERGY STAR website product list. CEE recommends that EPA be explicit on the website where “connected” products are identified regarding the requirements and the date that the requirements are effective. We

further recommend that EPA note that until a final DOE test procedure is in effect, it is only the manufacturers who are standing behind claims of “connected” functionality.

## Consider How to Address Price Signals in Addition to Reliability-Based Signals

Some CEE members are moving towards offering time-based pricing in the residential market. A customer may enroll in a time-based rate to capture the financial benefits of their “connected” appliance. In this scenario, signals sent to an appliance would be price-based, as opposed to reliability-based (examples of reliability-based signals would include Delay Appliance Load [DAL] and Temporary Appliance Load Reduction [TALR]).

Our understanding is that the current US Department of Energy (DOE) draft test procedure for DR functionality only addresses reliability-based signals, though time-based pricing is mentioned as a possible signal type. While reliability will be an important consideration for DR events, the price of power will also be important and could more frequently determine DR events, particularly for purposes of delaying and shifting load. Consequently, a test method that can evaluate the appliance’s ability to respond to price signals will be necessary to verify that the consumer will capture the financial benefits of DR. This is especially true of cycle-based intermittent appliances. The consumer’s ability to shift load to lower price, off-peak periods would be greatly enhanced with price signal capabilities.

We suggest that the DOE and EPA take steps to ensure that “connected” appliances are capable of receiving and responding to price signals as well as reliability-based signals.

## We Support a Delay for Finalizing the Specification

CEE understands EPA’s rationale for delaying the effective date of the specification from January 1, 2013 to March 1, 2014 given the upcoming changes to the federal standard and test procedure in 2014. We support the decision to avoid two revisions in a two year period. That said, CEE also shares EPA’s concerns regarding the high market share of ENERGY STAR refrigerators. We believe that efficiency programs can manage this issue in the near term by promoting CEE tiers 2 or 3, and thus are comfortable recommending that EPA postpone setting future efficiency requirements until an assessment can be made as to how the market is performing in 2013.

Thank you for your consideration of these comments. Please contact CEE Program Manager Eileen Eaton at (617) 337-9263 with any questions.

Sincerely,



Ed Wisniewski

Executive Director