

July 30, 2013

Ms. 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 2 Version 7.0 of the Residential Clothes Washer Specification, released by the Environmental Protection Agency (EPA) on June 5, 2013.

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 seven Canadian provinces. In 2011, CEE members directed \$6.1 billion of the \$7.6 billion in energy efficiency and demand response program expenditures in the two countries. These comments are offered in support of the local activities CEE members carry out to actively leverage the ENERGY STAR brand. CEE consensus comments are offered in the spirit of strengthening ENERGY STAR so it may continue to serve as our national marketing platform for energy efficiency.

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.

## **CEE Supports Continuation of Technology Neutral Performance Requirements for Clothes Washers**

The first ENERGY STAR label for “resource efficient” clothes washers in 1995 had one qualifying model; by 2000 it represented nearly 10 percent of the market, thereby demonstrating the transformative power of ENERGY STAR’s binary label when it was applied equally to all potential

technologies and where the market was then free to dictate the desired amenity. As was the case in 2000 when some argued that ENERGY STAR levels could not be achieved with a top loading configuration, CEE continues to support a prevailing performance level that remains independent of configuration or technology. Otherwise, how would a typical consumer know that an ENERGY STAR top loader is permitted to consume a meaningful additional amount of energy for the same function performed by a front loader. CEE has consistently supported a technology neutral approach within its own performance specifications and the organization has been a strong supporter of ENERGY STAR over the years for its adherence to this important tenet of the Program. The ENERGY STAR label is most effective when one set of requirements can be applied to a product category, regardless of size or configuration, to ensure that consumers have access to equivalent energy savings across the full range of available product.

The statement in the Draft 2 release notes read, “Because top-load and front-load clothes washers perform the same basic function, EPA proposed in Draft 1 that they be considered together for purposes of ENERGY STAR qualification.” However, upon further review and based on manufacturer feedback on Draft 1, EPA has now indicated that there may be enough of a difference in functionality—particularly with respect to wash-time—to warrant treating the different configurations as two separate classes. We appreciate that rationales can be fashioned to suit the desired outcomes of various constituencies and would therefore suggest that data and scientific basis first be developed regarding the necessity of the performance difference, followed by careful balancing of the prevailing considerations that drive change in the established program. With respect to product size, EPA states that it “evaluated the model data for units that range from 1.6 to 2.5 cu-ft. Based on this analysis and in light of the unique consumer need met by this space saving product size,” EPA proposes new levels for this product category. Accordingly, we would appreciate the benefit of the data, scientific consideration, analysis and assessment of the relative program considerations presented, recognizing that we may reach the same conclusion. However, CEE does not find a feasibility assertion, unsupported by data, to offer a sufficient basis to compel this change to a fundamental tenet of the ENERGY STAR Program.

## **CEE Supports Cleaning and Rinse Performance Requirements in Version 7.0 of the Specification**

CEE recognizes that as technology improvements permit further reductions in energy and water use by clothes washers, it is important that the ENERGY STAR label continues to represent high efficiency with uncompromised cleaning and rinse performance. As such, CEE applauds EPA and DOE’s efforts to develop a test procedure that; (1.) calls for evaluating cleaning and rinse performance, (2.) establishes the expectation that ENERGY STAR clothes washers will be evaluated against this procedure, and (3.) begins to build a dataset as a basis for establishing future performance requirements. We look forward to the opportunity to share and vet this data with our membership. Given the currently proposed effective date of March 7, 2015, and

assuming the test procedure is appropriately reviewed and validated, CEE would support the incorporation of the completed cleaning and rinse performance test procedures within Version 7, but in any event, as soon as is practicable.

## **CEE Notes Potential Implications of the Delayed Effective Date on the ENERGY STAR Brand**

CEE would support consideration of an earlier effective date for the residential clothes washer specification. According to ENERGY STAR data, the market share of ENERGY STAR clothes washers had reached 60 percent in 2011 and the total number of clothes washers on the ENERGY STAR list increased by over 20 percent from 2011 to 2012. If Version 7.0 is not enacted until 2015, the market penetration of ENERGY STAR clothes washers likely will have been greater than 50 percent for a four year period. This circumstance has potential implications for the ENERGY STAR label as a distinguishing force in the market, and which may be worthy of deeper consideration in light of the maturity of the program in this product category. We also note that some CEE members have observed that this level of market penetration may be too high for them to effectively leverage ENERGY STAR as a platform for clothes washer programs.

## **Consumer Benefit is Likely Maximized if ENERGY STAR Products Offer Multiple Pathways to Connect within the Physical Premises of the Home**

As detailed in our previous January 22, 2013 comments, and restated below, we believe consumer expectations surrounding connected devices are likely to be affected by their experiences with connected audio-visual equipment, computers, and phones. If true, consumers will expect a product endorsed by ENERGY STAR as “connected” to have numerous options to connect. We remain concerned that EPA’s proposal to endorse products that allow for a product to connect via a single pathway (where such pathway may be limited to the manufacturer’s cloud) may disappoint some consumers, and thus poses a potential risk to the ENERGY STAR brand. CEE members and other DR program managers are very supportive of EPA’s intent to recognize products that are capable of responding to a utility demand response signal, but are concerned EPA’s proposed approach will not yield the desired outcomes.

## **Summary of Previous CEE Comments and Concerns**

### **Cloud Connectivity Likely Beneficial, But Is Not A Sufficient Pathway to Connect**

While cloud-based connectivity is encouraged, we believe that allowing cloud-based translation of proprietary protocols to open standards as a sufficient pathway to be listed as “connected” by ENERGY STAR will compromise EPA’s strategic objectives. Our chief concern is that a broad segment of consumers will not have a positive experience if a cloud-based system is required for

their ENERGY STAR appliance to connect. We continue to recommend that EPA require open standards at the appliance, so that consumers may allow any device or service provider to communicate with the appliance directly, within the premises of the home, without relying on a cloud-based system provided by the appliance manufacturer. Several mature and widely-adopted technological solutions cited by EPA exist today that would enable this capability. Cloud-based solutions may be offered as an additional pathway to connect; our opposition is to adopting language that allows cloud-based translation as the only means to connect with an ENERGY STAR product through open standards.

***Cloud-based translation is unlikely to maximize flexibility and freedom of choice to consumers.*** If a manufacturer selects a cloud-based pathway to connectivity, consumers will be required to depend on the appliance manufacturer's cloud to obtain any benefit from "connected" products. Consumers have come to expect that when they purchase a connected product, they will ultimately have the choice and opportunity to connect that device to other products within their home, and/or directly with various service providers. Cloud-based translation to open standards is outside the norm of what today's consumers expect regarding a connected product.

***Cloud-based translation may permanently couple a consumer to a particular manufacturer's service offering.*** All customer energy consumption data would likely need to be funneled through the appliance manufacturer's cloud, raising privacy concerns for both the consumer and the program administrator. Any program element that jeopardizes consumer privacy will be difficult for program administrators to adopt. Even if EPA requires appliance manufacturers to share that data with 3<sup>rd</sup>-parties in a secure manner, consumers will always be required to work through the appliance manufacturer. Consumers should have the option to select how they will connect, and not be dependent on a particular service provider. If EPA allows cloud-based translation as a sole means of achieving connectivity, some homeowners may be obligated to maintain a relationship with that appliance manufacturer in perpetuity. This requirement likely violates the common expectation of today's consumer regarding a "connected" product. Additionally, this could create a paradigm where the consumer is pushed towards a single manufacturer for all future appliance purchases because of perceived compatibility issues, or to limit the burden of managing multiple service accounts.

***Cloud based translation creates a potential weak link in achieving connectivity.*** Consumers who purchase a "connected" appliance listed by ENERGY STAR, but that only connects via the cloud, will be dependent on the appliance manufacturer maintaining a high-quality service 24/7/365. While it's reasonable to assume major appliance manufacturers are capable of maintaining such a service, it's possible that the business case for "connected" appliances will evolve or economic reality will compel some manufactures to abandon a cloud-based strategy for achieving connected, particularly with the emergence of a standardized modular communication port. This situation would "strand" products that have no other means to

connect. How will ENERGY STAR manage consumer dissatisfaction that would stem from such a situation? Further, there is no guarantee that the appliance manufacturer will continue to serve as a neutral, benevolent point of translation to open standards.

*During outages, local connectivity within the premises of the home enables use of on-site photovoltaic, battery storage, or other resources to maintain power.* Ideally a home energy management system would be capable of connecting during such conditions in order to enable the limited resources to power the most necessary home equipment, such as lighting, medical equipment, or even appliances. If the only way to communicate with the appliance during an outage is to connect via the Internet, the connected appliance is unlikely to provide value at a critical time, or be linked with alternative power sources. Further, when grid supplied power is restored, the appliance should be able to re-connect, and not need to be re-configured.

## As a Mass Market, Federal Government Program, We Support Efforts that Serve Interests of All Consumers

Ideally, ENERGY STAR would identify “connected” products that are capable of benefitting the majority if not all consumers, but the following concerns may not be addressed by the draft consideration put forth:

*Cloud-based translation excludes customers without broadband.* Estimates of broadband penetration in American homes range from 30-64%. If a majority of appliance manufacturers selected a cloud-based system to achieve “connected,” products recognized as “connected” by ENERGY STAR would at best serve only 2/3rds of the market. We believe ENERGY STAR, and the mass market it serves, would benefit from requiring manufacturers to provide numerous pathways to connect that do not require broadband internet. Ideally products listed as ENERGY STAR “connected” would support all open standards, be flexible to work with future upgrades to those standards, and adopt a protocol that might not even exist today.

### *Providing only One Pathway to Connect Is Unlikely to Meet Consumer Expectations.*

Consumers have come to expect their existing “connected” household products, such as electronics, computers, and peripherals, to be capable of connecting to one another and to a home area network in several different ways (e.g. Wi-Fi, Ethernet, HDMI, a cellular network, etc.). If expectations aren’t managed, consumers may be disappointed to learn some ENERGY STAR products will only connect to other products via an Internet connection to the manufacturer’s cloud. It will be necessary to manage consumer expectations about the requirements to connect, and the uncertainty surrounding their eligibility for participation in utility programs. CEE is committed to work with EPA and other stakeholders to develop a communications strategy that manages expectations and mitigates risk to the ENERGY STAR brand.



## Enabling Demand Response Programs Requires a Modified Approach

CEE members and other DR program managers are very supportive of EPA's intent to recognize products that are capable of responding to a utility demand response signal, but are concerned EPA's proposed approach will not yield the desired outcomes. The following comments highlight their concerns:

**Allowing the cloud to serve as the sole means to connect will limit consumer uptake because some consumers will not allow use of their Internet connection.** It is unknown what percentage of consumers would prohibit utility demand response or energy efficiency programs from accessing their consumer-paid broadband internet, but we expect some will. This reaction will further limit the number of households who would benefit from an ENERGY STAR "connected" product that only connects via the cloud.

***Utilities may not choose to depend on an appliance manufacturer's cloud to implement DR or EE programs.*** Local electric companies use a variety of communication paths including AMI and expect to interact with their own customers as fits their business plan. This variety of communication paths implies that internet based connections are not the only solution for how they can, or intend to, interact with their customers. Additionally, these utilities depend on data that flows from an end-use device using an open standard to participate in different Energy Efficiency and Demand Response programs. It's unclear if, or how, appliances that connect via the cloud will enable this data flow.

***Utility "visibility" to individual appliances is likely necessary to assess and act on DR opportunities.*** In order to maximize the effectiveness of DR programs, a product must be connected during the entire event, which requires high levels of precision and reliability. The proposed specification language defining the response to an event limits the surgical precision necessary for short duration DR events. Relying on an Internet connection has the potential to compromise both the precision and reliability of the connection during the event. Recent laboratory testing of DR-capable appliances by at least one utility has confirmed this is the case. More so, due to reliability concerns, it is unlikely that short duration events will ever be called by the utilities due to a lack of "visibility." To extract additional value from the connected assets, the utility most likely will need to coordinate short DR events among many devices. In order for this to be successful, the utility must have a "clear line of sight" to individual DR-capable products, including their geographic location as it pertains to the electric grid. A cloud-based connected solution will hinder or prohibit extracting this value from these DR-capable appliances.

***We are unaware of any interface standard for cloud-based systems.*** If cloud-based translation is required, the utility must have the ability to communicate with the cloud-based systems of multiple manufacturers. No universal interface standard currently exists to address this need.

Utilities are unlikely to support multiple proprietary Application Programming Interfaces (APIs) developed by different manufacturers. Ultimately, the utility may be compelled to “pick winners” for utility programs, further limiting consumer options for “connected” products that will achieve Demand Response.

***Due to security concerns, many utilities will not leverage an appliance manufacturer’s cloud to implement EE or DR programs.*** As mentioned earlier, any program strategy that jeopardizes the security of consumer data is unlikely to gain market traction. Program administrators fear there will be security and privacy issues with sending DR or other signals through a 3rd party service provider’s system, such as a manufacturer’s web site. Further, utilities that are dispatching for economic reasons may be unwilling to risk exposing their market based decisions through the cloud.

***Cloud-based connectivity may not allow utilities to meet regulatory requirements for percentage participation in certain customer segments.*** Regulated utilities often need to serve all customer segments. Some customer classifications may have a low percentage of broadband internet subscribers, such as rural customers. This goes against the assertion that the location of the IP address - whether on the customer’s premises or in the cloud - is not relevant. The ability to communicate within the premises would ideally be required in order to know the appropriate details (including physical location) of the customer being served.

***Cloud-based interfaces for DR programs are generally used for business to business aggregator applications.*** By adopting a cloud-based model, manufacturers are inherently acting as DR aggregators, and may not completely understand the regulatory and systematic requirements needed to perform such a role. Manufacturers may not adopt the business oversight requirements associated with regulatory mandates for energy aggregation, further limiting the DR potential of ENERGY STAR “connected” products. CEE and its members stand willing to help manufacturers understand the role of aggregator, and recommend EPA investigate further the ability and commitment of manufacturers to play this role.

CEE would once again like to thank the EPA for the opportunity to comment on the ENERGY STAR Clothes Washer Draft 2 Version 7.0 Specification. Please contact CEE Program Manager Alice Rosenberg at 617-337-9287 with any questions about these comments.

| Sincerely,



Ed Wisniewski  
Executive Director