

March 31, 2014

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 1 Version 6.0 of the Residential Dishwasher Specification, released by the Environmental Protection Agency (EPA) on February 25, 2014.

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, the District of Columbia, and seven Canadian provinces. In 2012, CEE members directed nearly \$6.6 billion of the \$8 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.

Per Unit Savings Are Unlikely to Justify Financial Incentives by Programs

CEE appreciates EPA's efforts to continue supporting energy efficient dishwashers with the release of Draft 1 Version 6.0 specification. After reviewing the data and analysis shared by EPA, CEE agrees that a sufficient number of dishwashers are able to qualify, and that a variety of

brands are represented among the qualifying models. However, given the increase in the minimum efficiency standards, the relative per unit energy savings are limited and dishwasher incentive programs are no longer cost effective for the majority of efficiency programs. We are pleased that such programs have contributed to accelerated market acceptance of efficient dish washers but do not foresee continuation of incentive based approaches unless and until additional performance advances are made or sales of lower performing models escalate.¹

CEE Supports Reporting Requirements for Cleaning Performance

CEE supports EPA's proposal requiring manufacturers to assess cleaning performance using the new test method and to report this data to EPA. This data will enable EPA to better understand how cleaning performance varies with energy and water use and can help inform future specification revisions.

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” (i.e. interactive communications with energy consumer devices for energy and non energy related purposes). Below please find our comments, which are consistent with previous comments submitted on the ENERGY STAR Refrigerator Specification, to consider as you evaluate connectivity for residential dishwashers.

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 a suitable 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 and Seek Additional Specification of

¹ Given the high market share of efficient dishwashers, many programs have to consider the energy use of the products being sold at retail and adjust their baselines accordingly, further eroding energy savings.

Pathways to Ensure Consumer Realization of Potential Benefit

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, however, we are concerned that as a critical mass of DSM administrators seek to connect with an appliance, additional requirements will prove necessary. This is particularly true for the more traditional direct load control programs, where regulators have come to expect that the DSM administrator has established a long-term, reliable connection with customers that isn't reliant on customer broadband, or the long-term maintenance of a cloud-based network by a product manufacturer. While we believe that an open, non-proprietary means for achieving two way connectedness 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. Further, we note the importance of ENERGY STAR supporting compatibility across multiple products and manufacturers so that customers continue to retain flexibility for future product choice across manufacturers.

Specifically, we note the following observations:

- **Information-based "behavior change" demand response programs are emerging, and merit the support of ENERGY STAR.** In several states, demand response portfolios are increasingly adding new programs that communicate information (e.g. a peak price or

reliability challenge) via a compelling consumer engagement technology (e.g. an in-home display). These types of programs commonly “ride the coattails” of an engaging technology that provides non-energy benefits, and often communicates via an internet or cellular connection. This program approach, which is distinctly different from direct load control, is designed to share the responsibility of program implementation with 3rd-parties, and may not face the challenges we highlight in our argument for EPA to require connectivity within the physical premises of the home. However, these programs remain in the minority, and CEE members report that direct load control programs are expected to remain common in many states for the foreseeable future. We recommend that the ENERGY STAR Program require communication pathways that will support both direct load control programs and these emerging information based “behavior change” programs.

- **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 their utility for demand response purposes. 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
- **Regulators in some states may determine that cloud-based solutions would compromise customer data privacy and security due to the introduction of a third party into the flow of customer data and appliance control.** We recommend EPA carefully address how its connectivity requirements will safeguard customer data.
- **Requiring that appliances communicate in an open, non proprietary manner from within the customer’s premises (in addition to any cloud-based connectivity) optimizes the customer’s ability to choose who “manages” their appliance 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 appliance consumes 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 within the physical premises of the home would help ensure that the customer is afforded the ability to choose which offer to participate in based on her own needs and wants.

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. 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. 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.

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 as specified by the trusted ENERGY STAR Program, but is ultimately disappointed with the “connected” functionality or experience, 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 consideration and specification 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 expectations surrounding local utility DR program options (if any).

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 could be limited to the ENERGY STAR Program through the website administered by EPA until the brand effect of this program element is fully understood. Any assertion by manufacturers or retailers that suggests the ENERGY STAR Program is responsible for product performance associated with “connected” features 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 particular action taken— and when particular additional actions are planned — 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.

CEE would once again like to thank the EPA for the opportunity to comment on the ENERGY STAR Dishwasher Draft 1 Version 6.0 Specification. Please contact CEE Program Manager Eileen Eaton at 617-337-9263 with any questions about these comments.

Sincerely,



Ed Wisniewski
Executive Director