



1111 19th Street NW > Suite 402 > Washington, DC 20036
t 202.872.5955 f 202.872.9354 www.aham.org

July 1, 2011

Via E-Mail

Amanda Stevens
U.S. Environmental Protection Agency
ENERGY STAR Appliance Program
appliances@energystar.gov

Re: ENERGY STAR Program Requirements Product Specification
For Room Air Conditioners, Eligibility Criteria, Draft 2, Version 3.0

Dear Ms. Stevens:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Program Requirements Product Specification for Room Air Conditioners, Eligibility Criteria, Draft 2, Version 3.0. Please note that these comments address only the smart grid portion of Draft 2—AHAM previously submitted comments on the other portions of Draft 2 on June 16, 2011.

The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM is also interested and leading in the development of smart appliances and the policies surrounding a smart grid in the United States. The objective of the smart grid is to provide technology and systems (integrated into appliances and consumer devices used in everyday activities) that will allow consumers to automatically adjust and control their energy use and costs. The development of standardized and interoperable communications and application protocols for smart appliances will benefit consumers and utilities, allowing customers to manage their energy use and demand, thus reducing peak loads and enabling appliances to respond to spinning reserve requirements on the electric grid. Through the use of smart appliances, consumers will also save money on their electric bills as well as increase the deployment of renewable energy. A smart appliance is a product which has the capability to receive, interpret, and act on a signal received from a home energy management system, utility,

or third party energy service provider, and automatically adjust its operation depending on the signal's contents and settings from the owner.

I. ENERGY STAR Petition for 5% Allowance

Although AHAM has requested and very strongly supports ENERGY STAR incorporating a 5% allowance for smart appliances as outlined in a petition sent by AHAM and energy efficiency advocates and environmental and consumer groups on January 6, 2011,¹ we do not agree with the approach EPA proposes in the room air conditioner draft specification. Not only will the EPA approach in this specification not incentivize manufacturers, but the requirements outlined may be a disincentive. A better approach is for EPA to implement the 5% allowance for smart grid capabilities across all the products in the petition (refrigerator/freezer, dishwasher, clothes washer, clothes dryer, and room air conditioner) in order to provide certainty to manufacturers that EPA and DOE, through the ENERGY STAR program, are agreeing to take full advantage of the benefits an entire suite of appliances will provide to the electrical grid. We are at a critical time for the development of the smart grid and smart appliances. Manufacturers are making design and tooling decisions now for the new appliance standards that will be effective in a few years. Now is the time to provide manufacturers with an incentive as they make key business decisions that will impact consumer choice and technology for years to come.

In order to facilitate a comprehensive approach, AHAM recommends that EPA, through the ENERGY STAR program, recognize the benefits of smart appliances outlined in the Pacific Northwest National Laboratory (PNNL) analysis, which demonstrates that the “benefits” of all smart appliances equal or greatly exceed the “cost” of the 5% allowance, by adopting a 5% allowance for all smart appliances which would jump start the smart grid at no cost to the federal government.

II. Communication Requirements

The AHAM White Paper “Assessment of Communication Standards for Smart Appliances” reflects a clear preference by the home appliance industry that the best communications architecture at this time features a hub or gateway that can communicate using common protocols and serve as the adapter or bridge to other devices on the Home Area Network (HAN).² This type of architecture is consistent with the OpenHAN architectures and provides simplicity for the consumer and the flexibility needed for future development needs. Additionally, this type of architecture supports a more robust, comprehensive “home networking” system approach compatible with consumer electronics devices.

OpenHAN provides the necessary information for devices and appliances to participate in demand response behaviors in the form of Home Area Network (HAN) requirements. Once appliances can participate in the HAN, innovation will follow.

¹ www.aham.org/smartgrid

² www.aham.org/smartgrid

Each appliance manufacturer must make an independent and voluntary decision as to which communications technology to incorporate into its products, and what level of external interoperability will be supported.

In the room air conditioner draft specification (Draft 2), EPA proposes that, in order to qualify a product for ENERGY STAR as smart grid capable, the appliance industry must develop and publish an Interface Specification or Interface Control Document as well as outline very detailed signal information to enable third party devices and applications. Not only is the level of detail specified onerous and costly, but, for example, SEP 1.0 already provides the necessary information for devices and appliances to provide energy use information to the consumer. EPA should not be working to enable one proprietary use. Instead, EPA should allow and encourage an open standards process, as outlined by the National Institute for Standards and Technology (NIST), to develop and evolve any required signal information. NIST has taken a lead in this area for the federal government, per the Energy Independence and Security Act of 2007 (EISA), and there is no need for the ENERGY STAR program to duplicate this effort. It would be very detrimental to the smart grid to have the proliferation of many proprietary protocols. This would serve to limit consumer choice and drive up costs to consumers unnecessarily as detailed in the AHAM White Paper “Assessment of Communication Standards for Smart Appliances”.³ For these reasons, in addition to security concerns, NIST has developed a list of “approved” communication standards that can be updated through the Smart Grid Interoperability Panel (SGIP) process.

One example of manufacturers from other industries re-enforcing this approach shows up in the California Public Utilities Commission (CPUC) hearing on May 6, 2011, to parties of record in rulemaking 08-12-009:

Control4 urged that the Commission should order consumer access to their Smart Meter data quickly and directly. Control4 argued that the Commission should order the use of communication standard SEP 1.0 rather than waiting for SEP 2.0. “The individual consumption data communicated in near real time (i.e., every ten seconds) via SEP 1.0 is more than adequate to provide consumers with analytics about their usage patterns, contextualized energy efficiency tips, and energy costs.”

Tendril argued that access to meter information should be provided immediately by SDG&E, PG&E, and SCE. Tendril stated that it fails “to see any justification in the record of this proceeding to support the assertion by SCE that achieving the objective established by the Commission is in any way ‘dependent’ on the development of a future standard.”

A. Paragraph 4.A.e

EPA proposes that in order to meet the optional criteria for smart grid capable designation, the product shall be capable of recording certain detailed and specific data at least once every 60 seconds and of transmitting that data once every 5 minutes upon request from a connected device.

³ www.aham.org/smartgrid

The requirement for logging data every 60 seconds and transmitting every 5 minutes seems to be unnecessary, unlikely to be leveraged fully, and adds cost and complexity that is not warranted. It is also not clear that data logging information such as this proposal are well covered by existing standards.

Prescribing this level of detailed requirement as part of this specification is not good for innovation. Market forces will determine this type of detail.

EPA should be looking at energy level responses not trying to create design requirements. Such requirements may have little or no impact on energy levels in the product. Standards exist for providing information outside the devices and those existing open standards should be the example used here (such as SEP 1.0).

B. Paragraph 4.A.f

EPA proposes that in order to meet the optional criteria for smart grid capable designation, the product shall be capable of accepting remote control commands from authorized devices or software applications to enable near-real time (within 0.5 seconds after receiving the command) settings changes to certain operations at any point in time.

AHAM is concerned that it may be too easy to hack or cause issues with such direct/immediate control of modes. As this could be potentially damaging to the unit, there should be fall back options and settings. It is more favorable and secure to have mode/behavior “requests” that the unit responds to based on its own logic and certain other parameters not a “command.”

EPA should be looking at energy level responses not trying to create design requirements. Responses within 0.5 seconds may have little or no impact on energy level and not be perceivable by consumers.

C. Paragraph 4.A.d

EPA proposes communications shall include basic authentication and authorization so that only authorized devices or software applications can access the product, and security measures to protect against unauthorized access.

The security requirements are too vague and it is too early in the process to define at this time. For example, what constitutes secure? Does restricted address requirements provide more security? Does a single special acknowledged command or exchange provide more security? Is a key required? Why is “secure” being pursued instead of “robust?” It is the underlying security requirements that must be robust. NIST is still in the process of defining levels of security. They have industry experts working cyber security at all levels of the grid. Evaluations of protocols are performed by NIST to determine what should be included on the “NIST list.” EPA should default to the agency the Congress has assigned the responsibility to coordinate the development of security standards, which is NIST.

AHAM appreciates the opportunity to submit these comments on ENERGY STAR's proposal regarding the ENERGY STAR Program Requirements Product Specification for Room Air Conditioners, Eligibility Criteria, Draft 2, Version 3.0. We would be glad to discuss this matter further should you request.

Best Regards,

A handwritten signature in blue ink, appearing to read 'Charlotte Skidmore', is positioned below the 'Best Regards,' text.

Charlotte Skidmore
Director, Energy Analysis