ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

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August 8, 2011

Via E-Mail

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

Re: ENERGY STAR Residential Refrigerators and Freezers Version 5.0 Specification Framework Document

Dear Ms. Stevens:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Residential Refrigerators and Freezers Version 5.0 Specification Framework Document (Framework Document). These comments only address the non-smart grid portions of the Framework Document. AHAM has been fluidly commenting and working with EPA on the smart grid portions of the document, and those communications serve as our comments.

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 supports EPA and the Department of Energy (DOE) in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement, as long as product performance can be maintained for the consumer. AHAM is concerned about EPA's proposed new approach to setting maximum annual energy use levels which would collapse together several product classes. That approach adds unnecessary burden and complexity to an already complex regulatory schedule for refrigerator/freezers. The onslaught of regulatory uncertainty for refrigerator/freezers has become daunting. There are proposals that will lead to multiple changes over the next few years. This transitional period is not the time for EPA to experiment with changes to how the levels are determined.

Instead, EPA should continue to use the approach it currently uses to set maximum annual energy use levels—i.e., a percentage more efficient (less energy use) than the federal minimum standards by DOE product class. And EPA should do this in only one tier, saving out-year criteria for a later specification revision.

I. Revisions to Maximum Annual Energy Use

A. Proposed New Approach to Setting Maximum Annual Energy Use

EPA stated that it is considering a new approach to differentiate refrigerators, irrespective of configuration, based on annual energy use. Under this approach, EPA would segment full-size refrigerators into three size ranges, irrespective of configuration, and the maximum annual energy use limits would be expressed as a linear function of adjusted volume. In addition, EPA is considering using a separate functional adder (expressed in kWh/year) for refrigerators with through the door ice and water service.

This potential new approach, which would collapse several product classes and then re-divide them based on volume, is a drastic change from the current approach under which EPA sets maximum annual energy use based on a percentage more efficient than the federal minimum standards. DOE, through its lengthy, thorough, and long-existing rulemaking process, has established separate product classes for good reasons. AHAM strongly opposes the potential new approach, and instead urges EPA to continue using the current approach to setting maximum annual energy use criteria for ENERGY STAR.

The cumulative regulatory burden on manufacturers of refrigerator/freezers is mounting, and adding this new collapsed product class approach to the ENERGY STAR program, which though technically voluntary is, owing to the success of the government-industry partnership, effectively mandatory, as qualification has become a quid pro quo, to compete in the market, only adds to that burden. In the next five years, refrigerator/freezer manufacturers are facing the following changes from DOE regulation:

1. Substantial changes to the refrigerator/freezer test procedures that impact measured energy;
2. Changes to the refrigerator/freezer standards levels to increase required efficiency levels, which include a place-holder value for ice maker energy use;
3. Amendment of the refrigerator/freezer test procedure to specify a method for measuring ice maker energy use; and
4. Amendment of the refrigerator/freezer energy efficiency standards to account for measured ice maker energy use (as opposed to the placeholder value).

EPA now proposes to add to that list:

1. A potential Tier 1 specification change that could diverge from the long standing approach to setting qualification criteria (both energy and non-energy elements);
2. A change to the Tier 1 level to account for the changes to the DOE test procedure and standards levels (i.e., a crosswalk); and
3. A potential Tier 2 specification change that would further increase required efficiency levels.

The timeline for all of these changes is compressed, as shown on the attached timeline (Attachment A). As this timeline demonstrates via the large arrows, there are four points in time during the next five years when changes to energy efficiency would likely be required, each of which could require:

1. Re-design to meet new efficiency levels;
2. Re-testing of existing models under a new test procedure;
3. Changes to model numbers and labels to reflect energy as measured under a new test procedure;
4. Potential discontinuance of models (which requires attention to existing inventory);
5. Changes to floor models; and
6. Changes to product literature and other promotional materials.

All of these changes demand an incredible amount of resources, both in time and money, not just on the part of manufacturers, but also trade partners. Consumer confusion will also be high. And the regulatory timeline means that all of these changes will be required close in time to each other. Adding to this burden the potential new approach to setting ENERGY STAR maximum annual energy use levels, which would collapse product classes, will add substantially to the already foreseeable burden.

On the other hand, if EPA were to continue to use the approach it currently uses to set maximum annual energy use for ENERGY STAR criteria, which uses a percentage above the federal energy efficiency minimums, the burden would be greatly reduced largely because it is more consistent with DOE's approach to setting federal energy efficiency minimums. The proposed new approach to consolidate product classes inappropriately varies from the DOE's product class approach, and the difference causes significant issues in setting levels and in ensuring, upon the change in the federal minimums in 2014/2015, that there is no increase in the stringency of the ENERGY STAR levels and that the levels account for changes to measured energy in the test procedure.

The change in the federal minimum standards is accompanied by significant changes in the test procedure, which will become effective concurrent with the new standards levels. The changes to the test procedure are significant because they have an impact on measured energy. For example, there are changes to the set point temperatures and the volume measurement and a placeholder was added to incorporate ice maker energy use. In addition, the slope of the equations for bottom mounts and top mounts has been changed to account for an error which caused the slope of the lines of different product classes to cross. What that means is at the point where the lines crossed, the stringency of the standards for those product classes was no longer directly relative because the lines were no longer parallel. So, the standard for bottom mounts was intended to be less stringent than the standard for top mounts, but when the lines crossed at a certain volume, the standard for bottom mounts became more stringent than the standard for top mounts. That error has been revised in the test procedure to be effective along with the new standards—the three lines for top mounts, side by sides, and bottom mounts will be parallel and have a consistent relationship to each other.

Because of these, and other, changes that affect measured energy, DOE did a crosswalk between the old standards and the new standards to account for that difference in measured energy. The crosswalk is somewhat difficult to do, but not impossible. And EPA should be able to replicate it in with the ENERGY STAR levels in preparation for when the federal minimums change in 2014/2015. The same is true for ensuring that the levels themselves do not change. For example, if EPA sets levels to be effective in 2013 at 25% above the current federal minimum, and the federal minimum increases in 2014/2015 by 20% above the current federal minimum, the new ENERGY STAR level in 2014/2015 would be 5% above the new federal minimum. AHAM encourages EPA to consult DOE on this process and how it can be applied to the ENERGY STAR levels EPA sets to be effective in 2013. AHAM would also be glad to assist EPA and encourages EPA to specify the crosswalk it will use in its draft specification rather than wait until 2014/2015 to do the crosswalk. That will provide regulated parties with clarity and consistency and allow them to plan products in advance and avoid another specification change only a few months after this one is finalized.

If EPA were to nevertheless change its approach to collapse product classes, AHAM does not see how a crosswalk could be effectively achieved when the new federal minimum standards go into effect in 2014/2015. DOE's standards vary by product class and that is why EPA's current approach works—it is comparable to DOE's approach. If EPA conflates the product classes, how will it determine an appropriate level? It is likely that a detailed analysis similar to that DOE does to set standards would be required, and because the approach differs from DOE's, EPA would not be able to rely on the substantial amount of work DOE has done in setting standards levels. EPA would be starting from scratch. And EPA would have no historical data upon which to rely in setting the new levels for the collapsed product classes. Nor would AHAM have any data that has already been collected to assist EPA. AHAM thus opposes the proposed collapsed product class approach, and strongly urges EPA to continue to use the approach it currently uses to set maximum annual energy use for the ENERGY STAR program. If EPA proceeds with the collapsed product class approach, AHAM requests that EPA provide a detailed explanation of exactly how it intends to accomplish a crosswalk when the standards levels change in 2014/2015 to ensure that the stringency of the levels set for 2013 do not change and to account for the change in measured energy due to the new test procedure. AHAM does not see a way for EPA to accomplish such a crosswalk in 2014/2015 if it collapses product classes without affecting the stringency of the levels for at least one of the product classes.

In addition to the technical issues in actually accomplishing EPA's proposed collapsed product class approach, AHAM has concerns with EPA's reasoning for potentially using such an approach in the first place. EPA bases its new approach, in part, on the reasoning that larger, more fully featured units use more "absolute" energy than typically smaller, less featured top mount units. If EPA is going to apply such criteria to larger, more fully featured units, it must do a holistic analysis of the energy use and environmental impact of all units. For example, EPA should consider the following issues:

1. Refrigerator-freezers with through-the-door ice have a higher measured energy under the DOE test procedure than products without that feature because, due to their design, they have a higher heat leak. And the impact of that heat leak on measured energy is greater under the test conditions than it is in the field because of differences in ambient

temperature (90 degrees Fahrenheit under the test procedure as compared to an estimated average of about 70 to 75 degrees Fahrenheit in a consumer's home). Furthermore, it has long been industry's position that, in practice, refrigerator-freezers with through-the-door ice (and water) make it so that consumers open the refrigerator or freezer door less frequently. The difference between products with and without through-the-door ice is not accounted for in the refrigerator/freezer test procedure, which is a closed door test, meaning that it does not incorporate door openings. Door openings contribute significantly to energy use in the home. DOE's energy efficiency standards for refrigerator-freezers recognize these design differences and test procedure limitations through less stringent standards for products with through-the-door ice than for products without that feature. EPA does seem to recognize this in the Framework Document as it suggests that it could use a functional adder for this feature. Such an allowance is necessary. (Of course, if EPA just continued with its current approach, it would not need to gather data and do an analysis of what that functional adder should be because the ENERGY STAR level would be based on the DOE levels which already take this into account).

2. EPA should study the carbon footprint of all units. Larger units may allow for fewer trips to the store, which could reduce the overall carbon footprint.

3. EPA should study the net energy impact of its proposed approach to collapse product classes. Refrigerator/freezers cannot be compared to electronic products that consume more energy based on their size so that by buying a smaller product, less energy is used—i.e., a consumer will not by two electronic products to make up for a smaller size product. But for refrigerator/freezers, consumers require a certain amount of refrigerator and/or freezer space to accommodate their families. If a consumer is forced to buy a smaller unit in order to get an ENERGY STAR unit, it is more likely that the consumer may buy more than one unit, or even worse from an energy use perspective, keep their old unit in addition to the new unit. This negates the energy savings ENERGY STAR is trying to achieve.

4. If EPA makes it too difficult, or even impossible, for larger, more fully featured units to meet ENERGY STAR eligibility criteria, manufacturers will have less of an incentive to increase the energy efficiency of those units. Without an incentive to obtain the ENERGY STAR mark, it is likely that many, if not most, units that are now ENERGY STAR rated will revert to the federal minimums rather than improve efficiency above that level. That will result in lost energy savings opportunities.

EPA should examine the overall impact of its new approach to collapse product classes before making the determination that it will result in more energy savings than the current approach. The ENERGY STAR program should not be used as a means of social engineering. The proposed approach to collapse product classes risks doing exactly that: pushing the market away from popular side by side and bottom mount units toward smaller top mount units. Thus, EPA's proposed approach will limit consumer choice rather than purely drive energy savings. That should not be EPA's goal, nor is it the role of the government, even in a "voluntary" program, to effectively set design requirements for products.

B. Potential Out-Year Criteria

In the Framework Document, EPA indicated that "[i]n light of pending changes to minimum Federal efficiency standards, EPA is considering setting out-year criteria (i.e., Tier 2) for refrigerator-freezers, to be effective approximately 2 or 3 years after the effective date of the initial criteria change."

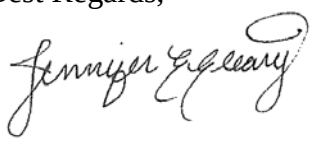
EPA should not follow a two-tiered approach for the revised refrigerator/freezer ENERGY STAR specification due to complexities in energy efficiency standards level changes in 2014/2015 and also the incorporation of measured ice maker energy soon after that. To minimize consumer confusion and manufacturing uncertainty over multiple changes in labels, federal standards, and ENERGY STAR specification changes, AHAM proposes that EPA do only one tier during this specification change that would determine the increased stringency for ENERGY STAR products presumably lasting through the transition through the new 2014/2015 federal minimum energy performance standards. If EPA later determines that the ENERGY STAR levels require a change, it should then engage in a specification revision. The regulatory landscape makes it too difficult to attempt to predict what levels should be two to three years after the new federal minimums go into effect.

II. Anticipated Scope of Revisions—Wine Chillers and Beverage Centers

EPA proposes to clarify the scope of the ENERGY STAR program to be consistent with the FAQ, "Can a wine refrigerator, kegerator, or residential beverage chiller qualify for ENERGY STAR?." That FAQ makes it clear that wine storage products and other similar beverage centers are not included within the scope of the ENERGY STAR program, including hybrid products. AHAM supports that position. Although DOE has recently issued guidance that includes *some* hybrid products in the definition of refrigerator and refrigerator-freezer, AHAM has filed comments opposing that guidance (Attachment B). DOE has stated that it intends to engage in a separate rulemaking to cover wine storage and similar products, and AHAM supports that rulemaking—all wine storage products, including hybrid products, should be considered as part of that rulemaking. Similarly, EPA should wait for DOE to complete that rulemaking before adding any wine storage or beverage center products to the ENERGY STAR program.

AHAM appreciates the opportunity to submit comments on the ENERGY STAR Residential Refrigerators and Freezers Version 5.0 Specification Framework Document, and would be glad to further discuss these matters.

Best Regards,



Jennifer Cleary
Director, Regulatory Affairs

ATTACHMENT A

Key	
Red	Standards (Icemaker Adder Only)
Blue	Measured Icemaker Energy
Green	ENERGY STAR
?	Unknown Date
*	Date based on AHAM/ACEEE Agreement
Italic	*Possible Label Change (DOE or ESTAR)*
Underline	Effective Date of Rule
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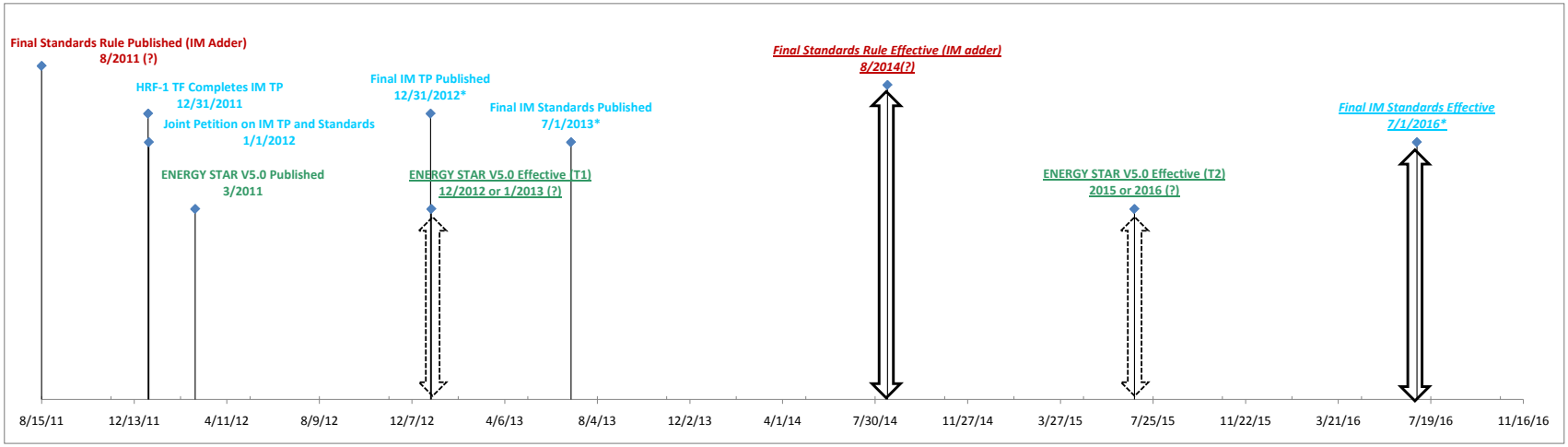
⟺	Possible Efficiency Change



ATTACHMENT B

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July 19, 2011

Via E-Mail

Ms. Ashley Armstrong
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Re: AHAM Comments on DOE's Guidance with Respect to Scope of Coverage for Hybrid (Wine Storage) Refrigeration Products

The Association of Home Appliance Manufacturers (AHAM) respectfully submits the following comments to the Department of Energy (DOE) on its guidance with respect to scope of coverage for hybrid (wine storage) refrigeration products, issued on February 10, 2011 (Wine Chiller Guidance).

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's more than 150 members employ tens of thousands of people in the U.S. and produce more than 95% of the household appliances shipped for sale within the U.S. 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.

DOE released guidance in February 2011 meant to clarify the scope of coverage, under the energy efficiency standards for refrigerator/freezers, for hybrid (wine storage) refrigeration products. The need for this guidance arose from ambiguities in the definition of "electric refrigerator" and "electric refrigerator-freezer" promulgated in DOE's final revised test procedure as to the coverage of hybrid (wine storage) refrigeration products. (*See* 75 Fed. Reg. 78810) (December 16, 2010). Unfortunately, though DOE's guidance may clarify the scope of coverage, it does so in an arbitrary and inequitable way.

DOE's guidance states:

> A wine storage compartment of any size added to what would otherwise be an *electric refrigerator* does not change the product's status as an *electric refrigerator* and does not exempt it from coverage. The same outcome applies for any *electric refrigerator-freezer*—i.e., adding a wine cooler compartment to an *electric refrigerator-freezer* would not exempt that product's coverage as an *electric refrigerator-freezer*.
>
> However, products that include a wine storage compartment but are otherwise freezers do not meet the *freezer* definition if the wine storage compartment comprises a majority of the total storage volume of that product. (Wine Chiller Guidance, at 1-2, emphasis in original).

This approach is inequitable. It is arbitrary that freezers with wine chillers are not covered, but refrigerators and refrigerator-freezers with wine chillers are covered. Even DOE recognizes the "potential disparity in treatment among these hybrid products." (Wine Chiller Guidance, at 2). Although the definition for "freezer" excludes the possibility that a hybrid wine chiller/freezer could be covered while the definitions for "electric refrigerator" and "electric refrigerator-freezer" are ambiguous enough that hybrid wine chiller/refrigerators and wine chiller/refrigerator-freezers could fall under the definitions, it does not make practical sense to follow such an approach, particularly when DOE plans to engage in a separate rulemaking to address wine storage products.

DOE should not ignore the current disparity in treatment with the intent to engage in a future rulemaking to address hybrid (wine storage) refrigeration products. Including wine chillers in the definition of "electric refrigerator" and "electric refrigerator-freezer" unfairly incorporates those products in a regulation without an appropriate rulemaking to address them. Will there be separate efficiency standards for hybrid products?

DOE has stated its intent to engage in a future rulemaking to address wine storage products and AHAM supports such a rulemaking. (*See* Wine Chiller Guidance, at 2). <u>All hybrid products should be addressed as part of that rulemaking</u> instead of addressing hybrid products in the Wine Chiller Guidance, in connection with the refrigerator/freezer test procedure, and other wine storage products later. Through the later rulemaking it is possible that DOE will determine that hybrid products should be tested per the refrigerator or freezer test procedure and refer to that test procedure. <u>But DOE must go through the rulemaking process to reach that determination, allowing for proper public comment</u>.

DOE did not sufficiently give notice of its intent to cover some hybrid products in the refrigerator/freezer test procedure rulemaking, and so, there was no sufficient opportunity to comment on the inclusion of only some hybrid products.

- The notice of proposed rulemaking stated that "DOE believes that the arguments made in favor of excluding wine storage products from the definition of electric refrigerators also apply to combination appliances such as these wine storage-freezer combination appliances—*i.e.*, the wine storage compartment does not attain temperatures which are suitable for long-term storage of perishable foods, and the sales levels of such products are small." (75 Fed. Reg. 29824, 29829 (May 27,

2010)). DOE proposed to amend the definition of "electric refrigerator-freezer" in order "to maintain consistency with treatment of single-compartment wine storage products, which were eliminated from coverage by the definition change for refrigerators . . . and to clarify that energy conservation standards have not been established for these products." (*Id.*).

- At the public meeting on June 22, 2010, DOE's consultant stated that "wine coolers are currently not covered because the definition limits the coverage. And so this change in the definition for 'refrigerator-freezers,' . . . will provide consistency, and also, you know, making combination wine storage refrigerators, or freezers, rather not covered. And then DOE would plan in the separate future rulemaking to address both of those products."

- Even the final rule was not clear as to DOE's intent. DOE first states "DOE is treating [wine storage-refrigerators] as covered products," and then states that the revised definitions of "electric refrigerator" and "electric refrigerator-freezer" "exclude products with wine storage or other compartments that cannot attain temperatures suitable for fresh food." (*See* 75 Fed. Reg. 78810, 78817 (Dec. 16, 2010). With contradictions like that, it is obvious why regulated parties have been confused about the scope of coverage of the definitions.

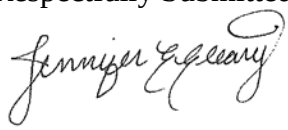
Based on the above statements in the proposed rule and the public meeting, it did not seem that DOE intended to cover any wine storage products, including hybrid products. <u>It is improper to issue guidance rather than engage in notice and comment rulemaking when the result of the guidance is to add to regulatory burdens in unanticipated ways</u>.

In addition, the International Electrotechnical Commission (IEC) is currently developing a procedure to incorporate wine chillers, including a definition and energy measurement. AHAM recommends that DOE participate in that process and that DOE consider harmonizing with the IEC procedure when it engages in its rulemaking regarding wine storage products.

Finally, as we have previously commented, guidance such as this which has significant implications and requires product specific knowledge (not just theoretical knowledge) should first be issued in draft form and comments should be sought from stakeholders. A process which seeks input from stakeholders will result in clearer, more well-reasoned guidance.

AHAM appreciates the opportunity to submit these comments on DOE's guidance with respect to scope of coverage for hybrid (wine storage) refrigeration products, issued on February 10, 2011, and would be glad to further discuss this matter.

Respectfully Submitted,



Jennifer Cleary
Director, Regulatory Affairs

cc: John Cymbalsky, DOE
Lucas Aiden, DOE