

**ENERGY STAR® for Commercial Refrigerators and Freezers:
Online Stakeholder Meeting
February 28, 2008**

Meeting Notes

Commercial refrigerator and freezer manufacturers and other industry stakeholders participated in an online meeting hosted by the U.S. Environmental Protection Agency (EPA) on February 28, 2008, to discuss the Draft 1 Version 2.0 ENERGY STAR Commercial Refrigerators and Freezers Specification. The Attendee List and meeting presentation can be downloaded from the ENERGY STAR commercial refrigerator and freezer specification revision Web page at: www.energystar.gov/productdevelopment. Click on the "Revisions to Existing Specification" link.

Below is a summary of EPA's presentation and the discussion that took place during the meeting. EPA has grouped the notes according to the relevant parts of the presentation. Where EPA was able to address stakeholder comments and/or questions during the meeting, these responses are provided. EPA is continuing to research the comments and concerns that were raised and may follow up with meeting participants and other stakeholders, as needed.

In reviewing this summary, please note the "Questions for Stakeholder Consideration." EPA is particularly interested in your feedback on these topics. If you have any questions or comments please contact Rachel Schmeltz, EPA, at schmeltz.rachel@epa.gov or Bijit Kundu, ICF International, at bkundu@icfi.com.

Part I: ENERGY STAR Overview and Current Specification
Rachel Schmeltz, EPA

Rachel Schmeltz provided a general overview of EPA's ENERGY STAR product labeling program including the following topics:

- ENERGY STAR Guiding Principles;
- Overall program success; and
- Program success in the commercial food service industry.

Next Ms. Schmeltz provided some background on the current ENERGY STAR specification for commercial refrigerators and freezers and discussed the success of specification. She went on to explain why a revision to the current ENERGY STAR specification is being considered, which included the following points:

- Current specification has been in place since 2001;
- Relatively high market share of ENERGY STAR qualified commercial refrigerators and freezers;
- New Federal minimum efficiency standards effective January 1, 2010 that make current ENERGY STAR levels mandatory; and
- Manufacturers' interest in adding new subcategories.

This section concluded with a description of the overall specification development process and a proposed timeline for completing Version 2.0 of the ENERGY STAR specification for commercial refrigerators and freezers.

Part II: Proposed Changes in Draft 1 Version 2.0
Rachel Schmeltz, EPA

Ms. Schmeltz walked stakeholders through the proposed Draft 1 Version 2.0 ENERGY STAR specification for commercial refrigerators and freezers focusing on ways in which this draft differs from the Version 1.0 specification. Currently, Draft 1 Version 2.0 proposes:

- New energy consumption levels subdivided into volume ranges;
- Inclusion of sliding door units and glass door units;
- Adoption of new test procedure ANSI/ASHRAE 72-2005;
- Revision of the integrated average product temperature for testing ice cream freezers to -15 degrees F; and
- Applicability to food-grade equipment only, with laboratory-grade equipment requirements being developed under a separate effort and added to the specification at a later date.

Stakeholder Comment: Niche products, such as a refrigerated box with a beer-dispensing accessory, are not explicitly identified in Draft 1. Will they be excluded from this new specification as they are in the current specification?

EPA Response: EPA is interested in receiving data on these products for possible inclusion in the Draft 2. Preliminary thoughts are that if these products can be tested using the ANSI/ASHRAE 72-2005 test procedure and the additional accessories do not affect the energy consumption of the unit, it may make sense to allow them to qualify for ENERGY STAR. EPA will further investigate this issue.

Stakeholder Comment: In response to laboratory grade refrigerators and freezers being temporarily excluded under the new specification, several stakeholders expressed interest in contributing to development efforts for these product types.

EPA Response: EPA will forward the documents previously distributed to stakeholders regarding this effort including: (1) a memo outlining EPA's intentions for laboratory grade equipment and (2) a data collection form to submit performance data for consideration.

Stakeholder Comment: The definition of ice cream freezer should include a distinction between chest and vertical units, and these units should not be grouped under one energy efficiency requirement. These two types of equipment have radically different energy consumption values due to their differences in design.

EPA Response: EPA did not propose energy efficiency levels for ice cream freezers in Draft 1 due to a lack of data on units tested to -15 degrees F. EPA encourages stakeholders to submit data on ice cream freezers, using this new temperature setting, and include information on whether the units are chest or vertical configurations.

Stakeholder Comment: A requirement that qualifying equipment meet the NSF/ANSI 7-2001 Standard should be included in the specification to ensure that ENERGY STAR represents only those units designed to operate in a commercial foodservice setting.

EPA Response: NSF standards have been referenced in other ENERGY STAR specifications for commercial foodservice equipment. EPA will further investigate the applicability and possible inclusion of a requirement that equipment meet the appropriate NSF standard in order to qualify for ENERGY STAR.

Part III: Data Analysis

Bijit Kundu, ICF

Bijit Kundu provided an introduction to the data analysis used for determining the proposed ENERGY STAR specifications. The data sources referenced in the analysis include the ENERGY STAR qualified product list, the California Energy Commission Appliance Efficiency Database, and the Consortium for Energy Efficiency Qualified List. Approximately 25% of the models listed in the data set meet the proposed new requirements representing multiple manufacturers.

For each volume category within each product type, Mr. Kundu proceeded to show plots of the raw data, proposed specification levels, and the number of product models that would qualify. Manufacturers were encouraged to test their units and submit energy consumption information, particularly for those subcategories for which EPA does not have adequate data to complete an analysis. These subcategories include:

- Ice cream freezers;
- Refrigerator-Freezer units; and
- Glass-door freezers and refrigerators.

Stakeholder Comment: EPA should consider certain design and technology attributes of commercial refrigerators and freezers when setting the specification requirements. The engineering attributes have a significant impact on the energy consumption of a model and are even more important than volume distinctions. As presented in Draft 1, the categories are too broad and only capture certain products from a few manufacturers. In most cases, the models that would meet the proposed levels are inferior units that would not serve the needs of most commercial foodservice establishments, particularly quick service or chain restaurants. Some attributes of commercial refrigeration products that EPA should consider when categorizing product types are:

- Auto v. manual defrost;
- Evaporator fan type;
- Condenser fan type;
- Static v. forced air; and
- Vertical v. horizontal chest configuration

EPA Response: Using the current data sources, EPA cannot determine the specific engineering attributes of each model. To learn more, EPA will look to modify the data collection form to include fields for partners to indicate specific design information. EPA will consider the data received and the design attributes identified to determine if different distinctions need to be identified in Draft 2. In general, EPA will only consider design attributes that affect the functionality of a product such that the resulting specification remains technology neutral. EPA will not set separate energy requirements based solely on an individual design or technology nor will the ENERGY STAR specification be prescriptive as to which technology must be used to achieve qualification.

Stakeholder Comment: For glass door units, display area should be considered when setting specification levels since the amount of glass directly affects the energy consumption of the equipment. As an example, a unit with a small transparent window will use much less energy than a similar unit with full glass doors and sides. Under the current Draft 1 requirements, these two units would have to meet the same requirements.

EPA Response: EPA will further investigate this issue.

Stakeholder Comment: There are instances where the proposed levels meet or fall below the Federal standards that become effective in January 2010.

EPA Response: EPA will make the necessary revisions to the proposed specification levels when issuing Draft 2 of this specification to ensure that ENERGY STAR is more stringent than the upcoming standard.

Stakeholder Comment: Instead of using straight lines, EPA should consider fitting a polynomial function curve to fit the data. This would be a more accurate way to set specification levels.

EPA Response: EPA will further examine this suggestion.

Stakeholder Comment: The data presented is skewed by multiple model numbers representing the same engineering design, with the only difference being the type of door (e.g. aluminum versus stainless steel). These models all have the exact same energy consumption value. The California Energy Commission requires that manufacturers report all model options even if they have nothing to do with energy consumption. The ENERGY STAR energy efficiency requirements should be derived from a data set that considers these identical models as one data point.

EPA Response: EPA will reexamine the data set to determine the impact these models have on qualification rates to determine how they should be addressed in the Draft 2 data analysis.

EPA Question for Stakeholder Consideration: Should identical models with different model numbers be considered as once data point if they are truly distinct models sold at different price points?

Stakeholder Comment: The data set EPA used for its analysis does not include all models available in the marketplace. In particular, the less energy efficient models are not represented because manufacturers are not reporting information on these models to the organizations EPA cited as data sources. Therefore, EPA is not capturing the top 25% of all models currently available with the proposed specification; instead you are actually capturing much less than 25%.

EPA Response: In January 2010, new Federal mandatory minimum efficiency standards will take effect for commercial refrigeration equipment. These levels have been set at the current (Version 1.0) ENERGY STAR levels. The data sources used by EPA reflect equipment that meet the new Federal standard levels only. Considering that less efficient equipment will no longer be available for purchase after January 2010, and EPA is proposing for Version 2.0 of this specification to take effect on May of 2009, it is appropriate for only those models that meet the Federal standard to be considered in the data set.

EPA Question for Stakeholder Consideration: Are manufacturers redesigning models to meet the Federal standards by 2010? Are there prototypes of these models that should be included in the dataset?

Stakeholder Comment: Manufacturers are concerned that more stringent ENERGY STAR specification levels will become Federal standards sometime in the future. This is what happened with EPC Act 2005. If this is the new paradigm of how Federal standards are set, then more than 25% of models should be captured under the Version 2.0 specification.

EPA Response: The ENERGY STAR Program is designed to identify top performing models in the market in terms of energy efficiency, rather than to exclude lower performing models. As such, the specification setting process does not consider the broader range of factors relevant to establishing a minimum efficiency level. When consulted by lawmakers, EPA makes every effort to be clear about the intended role of ENERGY STAR performance specifications.

EPA Question for Stakeholder Consideration: Is there still a place for voluntary ENERGY STAR requirements in this marketplace? EPA is willing to consider suspending the ENERGY STAR specification for commercial refrigerators and freezers if the ENERGY STAR Guiding Principles do not apply to this product category and partners are not interested in continuing with this specification or using the ENERGY STAR label.

Stakeholder Comment: EPA should be more detailed in the definition of a refrigerator-freezer unit. EPA should also consider modifying the test procedure for refrigerator-freezer units so that each compartment is tested separately and then the values from all compartments are added together to arrive at the energy consumption of the unit.

EPA Response: EPA is inclined to follow what is outlined in ASHRAE 72. However, we will further investigate this issue to determine if the suggested alternative is a viable and technically sound methodology.

Stakeholder Comment: For glass door units, EPA should consider accounting for different lighting options used within the refrigeration unit as these options can vary greatly resulting in varying energy consumption results. For example, smaller footprints might use 15 watts/lamp to illuminate the display while larger freezers can use as much as 80-100 watts/lamp. Many manufacturers have already incorporated fluorescent light sources into these products.

EPA Response: EPA will further investigate this issue.

Stakeholder Comment: The testing EPA is requesting is time consuming. Manufacturers will not be able to test all of the models requested between now and the end of the comment period.

EPA Response: While EPA is hoping for as robust a dataset as possible, manufacturers are advised that if they cannot test all models due to time constraints, focus should be on the best selling units within each subcategory.

Request for Comments
Rachel Schmeltz, EPA

Rachel Schmeltz concluded the presentation with a request for comments on Draft 1 by April 10, 2008. Stakeholders were encouraged to indicate in these comments those parts of the specification that they agree with as well as those that need further refinement. EPA plans to distribute a Draft 2 specification by May 5, 2008 so that there will be meaningful discussion at the stakeholder meeting planned for May 19, 2008, during the National Restaurant Association Show in Chicago.