ENERGY STAR® for Commercial Refrigerators and Freezers: Version 2.0

Stakeholder Meeting
May 19, 2008
Chicago, IL

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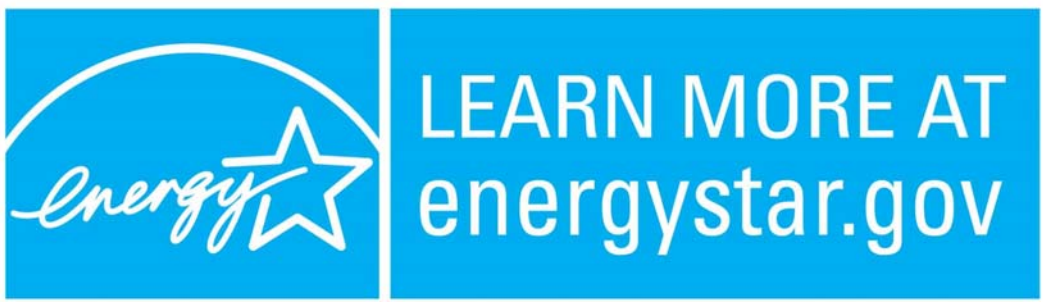


Presentation Overview

- Welcome and Introductions
- Review – Why Revise this Specification
- Activity to Date
- Discussion of Issues
- Action Items
- Projected Timeline
- Conclusion

Rationale for Revision

- Current ENERGY STAR specification has been in place since September 2001

- Market share of ENERGY STAR qualified refrigerators and freezers represent 35-44% of the marketplace

Rationale for Revision (cont.)

- In 2005, Congress passed new Federal minimum efficiency standards that make current ENERGY STAR levels mandatory for all commercial refrigerators and freezers as of January 1, 2010 – Energy Policy Act of 2005 (EPAct 2005)

- Manufacturers' interest to add new subcategories

Version 2.0 Specification: Activity To Date

February 14, 2008
Draft 1 Version 2.0 distributed

February 28, 2008
Online stakeholder meeting to collect feedback on Draft 1

April 10, 2008
Deadline for partners to submit comments and supporting data for Draft 1

May 8, 2008
Memorandum distributed identifying discussion topics

May 19, 2008 - NRA
Stakeholder meeting to exchange ideas on identified topics

Meeting Purpose

- EPA received limited stakeholder feedback on Draft 1
  - Draft 2 has not yet been developed
  - Instead EPA distributed memo on May 8 identifying issues/topics of special interest

- **The purpose of today's meeting is to get direct stakeholder input on identified issues/topics**

Internal Volume Measurement

- **Purpose**: To ensure accurate and consistent measurement and reporting of internal volume of equipment.

- **Proposed in Draft 1**: Interior volume is to be measured using ANSI/AHAM HRF-1-2004 (AHAM Volume)

- **Question to Stakeholders**: Is this the appropriate method to measure interior volume?

Proposed Volume Categorizations

- **Purpose**: To provide similar representation (~25% of available models) across all sizes of equipment.

- **Proposed in Draft 1**: Energy consumption levels subdivided into volume ranges (in cubic feet)
  - $0 < V < 20$
  - $20 \leq V < 30$
  - $30 \leq V < 70$
  - $70 \leq V$

Proposed Volume Categorizations (cont.)

- **Questions to stakeholders**:
  - Is this subdivision based on volume needed?
  - If so, do these ranges correspond generally to section sizes (i.e., under counter, single section, etc.)?

Additional Sub-Categorization

- **Purpose**:
  - To provide separate energy efficiency requirements if and where there is real functional difference among subcategories of models.
  - To provide end users with real choice among units that will meet their functional needs.

Additional Sub-Categorization (cont.)

- **Question to Stakeholders**:
  - Is there a need to further separate products based on functionality in order to give adequate choice for end users? For example:
    - Hinged vs. sliding doors
    - Horizontal vs. vertical units
    - Automatic vs. manual defrost
  - Sub-categorization would not be appropriate if the purpose was to allow all different technologies to qualify
    - The specification must remain technology neutral

Quality Requirements

- **Purpose**: To provide a level of assurance that ES qualified equipment will be 'of quality' and perform safely in a commercial environment.

- **Question to Stakeholders**: Should ENERGY STAR require that equipment meet other standards to ensure adequate safety and quality
  - ANSI/NSF Standard 7
  - ANSI/UL 471
  - ANSI/NFPA 70

NSF-7

- Quality/performance standard that ensures only units that maintain safe food/product temperatures are able to qualify
  - Not residential units that are used as is or are outfitted with features that allow their use in the commercial setting

- Also ensures that only food-grade units are able to qualify
  - Eliminates lab grade units

NSF-7 (cont.)

- Are the same purposes served by specifying “food-grade” and “intended for commercial use” in the definitions
  - *Commercial Food-grade Refrigerator: A cabinet designed for storing food products at temperatures above 32 degrees F but no greater than 40 degrees F which is intended for commercial use.*

- Which NSF parameters to specify?
  - Open or packaged food, or both?

Other Quality Requirements

- ANSI/UL 471
  - Safety standard that provides a level of assurance that the unit will perform safely in a commercial environment
- ANSI/NFPA 70
  - Safety standard that provides a level of assurance that the installation of the unit at the location is safe and presents no known risk to the operator.

Glass Door Units

- **Issue**: Need for further definition of glass door units.

- **Question to Stakeholders**: Should there be a requirement stipulating minimum % of door surface area and/or minimum number of sides that should be glass in order to be considered a glass door unit?

Other Types of Equipment

- **Issue**: Whether the spec should cover specialty products which can be tested using ASHRAE 72, e.g., beer dispensing units.

- **Question to Stakeholders**: Are there other products with accessories which do not affect the energy consumption of the unit that should be allowed to qualify for ENERGY STAR?

Ice Cream Freezers

- **Issue**: Inclusion of ice cream freezers in the specification.

- **Proposed in Draft 1**: Units should be tested at -15 degrees F to be consistent with Federal standard

- **Questions to Stakeholders**:
  - Is there an interest in continuing to cover ice cream freezers in the spec?
  - What are the different types to be covered?
  - What temperatures are appropriate for each type of equipment?

Repeated Values in Dataset

- **Issue**: Dataset is skewed by multiple models representing the exact same design.

- EPA filtered the data by excluding repeated models with the similar values in the following fields:
  - Manufacturer;
  - Volume;
  - Model Number; and
  - Energy Consumption

Repeated Values in Dataset (cont.)

	Unfiltered			Filtered		
	Qualify	Not Qualify	Total	Qualify	Not Qualify	Total
Solid Door Refrigerators	244	674	**918**	132	250	**382**
Solid Door Freezers	195	559	**754**	68	190	**258**

Note: Qualification determined based on equations slightly modified from Draft 1.

Repeated Values in Dataset (cont.)

- **Questions to Stakeholders**:
  - Should identical models with different model numbers be considered as one data point?
  - If they are sold at different price points, aren't they truly distinct models?

Data Needs

- **Issue**: There is inadequate data for ice cream freezers, refrigerator-freezer units, glass door refrigerators (> 70 cu ft), and glass door freezers .
- **Questions to Stakeholders**:
  - Are there existing data sources which contain data on these units?
  - Should the specification cover any or all of these categories?

Testing Equipment/Reporting Data

- **Issue**: Need to ensure equipment is tested consistently and that accurate energy consumption data is reported.

- **Question to Stakeholders**: How should equipment be tested to ensure as accurate energy consumption reporting as possible?
  - As intended for use
  - As shipped
  - Enable all manually operated switches to represent worse case scenario (i.e., lights, perimeter heat)

Data Integrity

- **Issue**: Accuracy/consistency of existing dataset has been questioned.

- **Questions to Stakeholders**: Can the data in the current ENERGY STAR database (and others) be used for purposes of revising this specification?

Additional Topics

- **Question to Stakeholders**: Are there any other issues that should be discussed now and/or considered in preparing Draft 2?

Manufacturers' Action Items from Discussion

- **Manufacturers** will submit to EPA any product data on refrigerator-freezer units, large glass door refrigerators, and all sizes of glass door freezers.

- **Manufacturers** will notify which of their products listed in the ENERGY STAR database, and not listed with NRCan, have been tested with all the options turned "ON".

- **Manufacturers** will also notify EPA of any product data which have been submitted to NRCan but not yet available on the Web site.

EPA's Action Items from Discussion

- In Draft 2, **EPA** will propose the use of gross volume instead of trace lines to calculate internal volume in ANSI/AHAM HRF-1-2004.

- When setting requirements in Draft 2, **EPA** will consider having a "floor," which requires a single energy consumption requirement for all models below a certain volume. This would apply for small volume units and would depend on the dataset of energy consumption values.

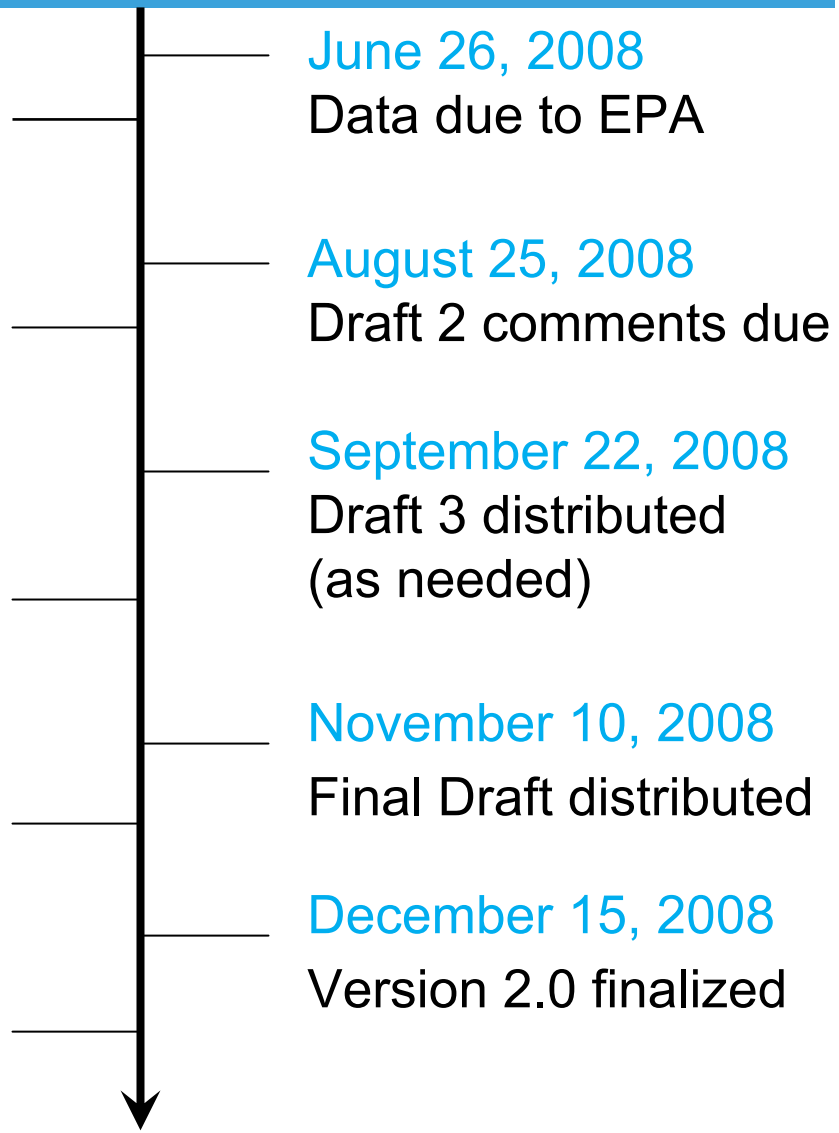
- When setting requirements in Draft 2, **EPA** will also consider amending the volume ranges according to the suggested ranges:
  - $0 < V < 15$;
  - $15 \leq V < 30$;
  - $30 \leq V < 50$;
  - $50 \leq V < 70$; and
  - $70 \leq V$.

- **EPA** will investigate how manufacturers categorize their equipment in product catalogs and consider using these pre-existing categories as the basis for further sub-categorization in the Draft 2 specification.

EPA's Action Items from Discussion (cont.)

- **EPA** will draft a statement for the Draft 2 specification that equipment should be able to meet NSF-7 and UL 471 in order to qualify.
- **EPA** will draft a requirement for Draft 2 stipulating that if a majority (greater than 50%) of the door surface area is solid or glass, the unit would be have to meet the requirements for a solid or glass door unit, respectively.
- **EPA** will investigate the use of galvanized interliners in beer-dispensing units in order to include beer-dispensing units in Draft 2.
- **EPA** will propose excluding ice cream freezers in Draft 2.
- In performing any data analysis for determining requirements in Draft 2, **EPA** will filter the data by excluding models with the same volume and energy consumption, differing only in aesthetic properties.
- **EPA** will distribute the stakeholder meeting presentation, meeting notes, and an amended timeline, with interim milestones, to all stakeholders.
- **EPA** will review the NRCan dataset for the analysis in developing Draft 2.

Proposed Timeline for Version 2.0



June 26, 2008
Data due to EPA

July 28, 2008
Draft 2 distributed

August 25, 2008
Draft 2 comments due

Early Sept 2008
Stakeholder meeting
(as needed)

September 22, 2008
Draft 3 distributed
(as needed)

October 24, 2008
Draft 3 comments due

November 10, 2008
Final Draft distributed

December 1, 2008
Final Draft comments due

December 15, 2008
Version 2.0 finalized

September 2009
Version 2.0 effective date

Discussion

QUESTIONS?

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