Draft 1 Version 2.0 ENERGY STAR® Commercial Hot Food Holding Cabinet Specification: Stakeholder Meeting

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Agenda

- Welcome & Introductions
- ENERGY STAR Objectives
- Specification Revision Rationale
- Proposed Changes in Draft 1
- Next Steps
- Q&A / Discussion

ENERGY STAR Product Labeling

- Objectives
  - To reduce greenhouse gas emissions, caused by the inefficient use of energy
  - To make it easy for businesses and consumers to identify and purchase products with enhanced energy efficiency that offer savings on utility bills while maintaining performance, features, and comfort

ENERGY STAR Spec Development

- Guiding Principles
  - Significant energy savings can be realized on a national basis
  - Product performance is maintained or enhanced with increased energy efficiency
  - Purchase of higher efficiency product is cost effective
  - Energy efficiency can be achieved through several technology options
  - Energy consumption and performance can be measured and verified with testing
  - Labeling differentiates products and is visible for purchasers

ENERGY STAR HFHCs

- More than 25 utilities/organizations offer incentives on the purchase of ENERGY STAR qualified commercial hot food holding cabinets

- ENERGY STAR qualified hot food holding cabinets can save businesses money
  - Approximately 3,200 to 9,300 kWh annually, or an average of $340 to $960 per year on utility bills

ENERGY STAR Spec: Success

- The ENERGY STAR specification took effect in August 2003
- There are currently **21 manufacturing partners** that have qualified **257 products**
- Market share of ENERGY STAR qualified HFHC units in 2008 was **79% of marketplace**

ENERGY STAR Spec: Version 1

- The Version 1.0 specification requires Commercial Hot Food Holding Cabinets to meet a maximum idle energy rate of **40 watts/cubic foot**
  - This requirement varies as a function of volume but based on a single line fit

- Max idle energy rate based on test method described in ASTM F2140-01

Rationale for Revision

- Large market share of ENERGY STAR qualified HFHCs

- Minimum efficiency regulations of **40 watts/cubic foot**
  - Federal-level *(pending**)*: American Clean Energy and Security Act of 2009 makes this requirement mandatory for all HFHCs sold in U.S. as of 1/1/2012
  - State-level: this requirement is already in effect in several states
    - Several more states will adopt this regulation in the coming year

**Passed by the House June 2009. The Senate counterpart bill, does not contain this standard. Final passage would depend on the final Senate language, and the resolution of any differences from the House bill in a conference committee.*

State HFHC Regulations

- States with minimum efficiency regulations of **40 watts/cubic foot:**

Maryland	Pennsylvania	Washington
California	Minnesota	New Hampshire
Connecticut	District of Columbia	Rhode Island
Texas	*New Jersey* (6/1/10)*	*Oregon* (9/1/10)*
Massachusetts (1/1/11)*		

**State with regulations that have passed, but not yet effective. Effective date in parenthesis.*

Key Proposed Changes in Draft 1

- Updated definition of commercial hot food holding cabinet
- New idle energy consumption rate requirements based on volume ranges
- New requirement to individually test and submit product data for each qualifying product model
- An effective date of February 1, 2011 for the Version 2.0 specification
- **The purpose of today's meeting is to get direct stakeholder input on these identified issues/topics**

Key Items NOT Modified in Draft 1

- Reference to ASTM test procedure
  - "Idle energy rate-dry test" in ASTM F2140-01

- Measurement of interior volume
  - Straight-line segments following the gross interior dimensions of the appliance
  - Not account for racks, air plenums, or other interior parts

HFHC Definition

- **Proposed Change:** New definition from California Energy Commission
  - *A heated, fully enclosed compartment with one or more solid or partial glass doors that is designed to maintain the temperature of hot food that has been cooked using a separate appliance*.
- **Rationale:** To include most accurate definition that is consistent with regulations when possible
- **Question to Stakeholders:** Is this definition appropriate?

Qualifying Products

- **Proposed Change:** Spec excludes
  - Dual temp units: excluded in Version 1.0 spec
  - Drawer warmers: now excluded

- **Rationale:** To ensure that efficiency requirements are applied to products appropriately based on accurate test data

Qualifying Products (*cont.*)

- **Proposed Change:** Added language so that spec only applies to commercial food grade equipment
- **Rationale:** To ensure that qualified equipment is designed to perform safely in a commercial environment
- **Question to Stakeholders:** Should ENERGY STAR require that equipment meet other industry standards to ensure adequate safety and quality?
  - NSF, UL, etc

Proposed Volume Categorizations

- **Proposed Change:** Idle Energy Consumption Rate levels subdivided into volume ranges (V = interior volume in cubic feet)
  - 0 < V < 13 : undercounter and half-size units
  - 13 ≤ V < 28 : ¾- and full-size units
  - 28 ≤ V : banquet units

- **Rationale:** To provide similar representation (~25% of available models) across all sizes of equipment
  - If single line fit to data, 25% of models overall would qualify, but not uniformly across all volume categories
  - With new approach ~25% of models in each volume category would qualify

Proposed Volume Categorizations (cont.)

- **Question to Stakeholders:** Do these industry recommended ranges correspond generally to equipment sizes (e.g., undercounter, full-size, etc.)?

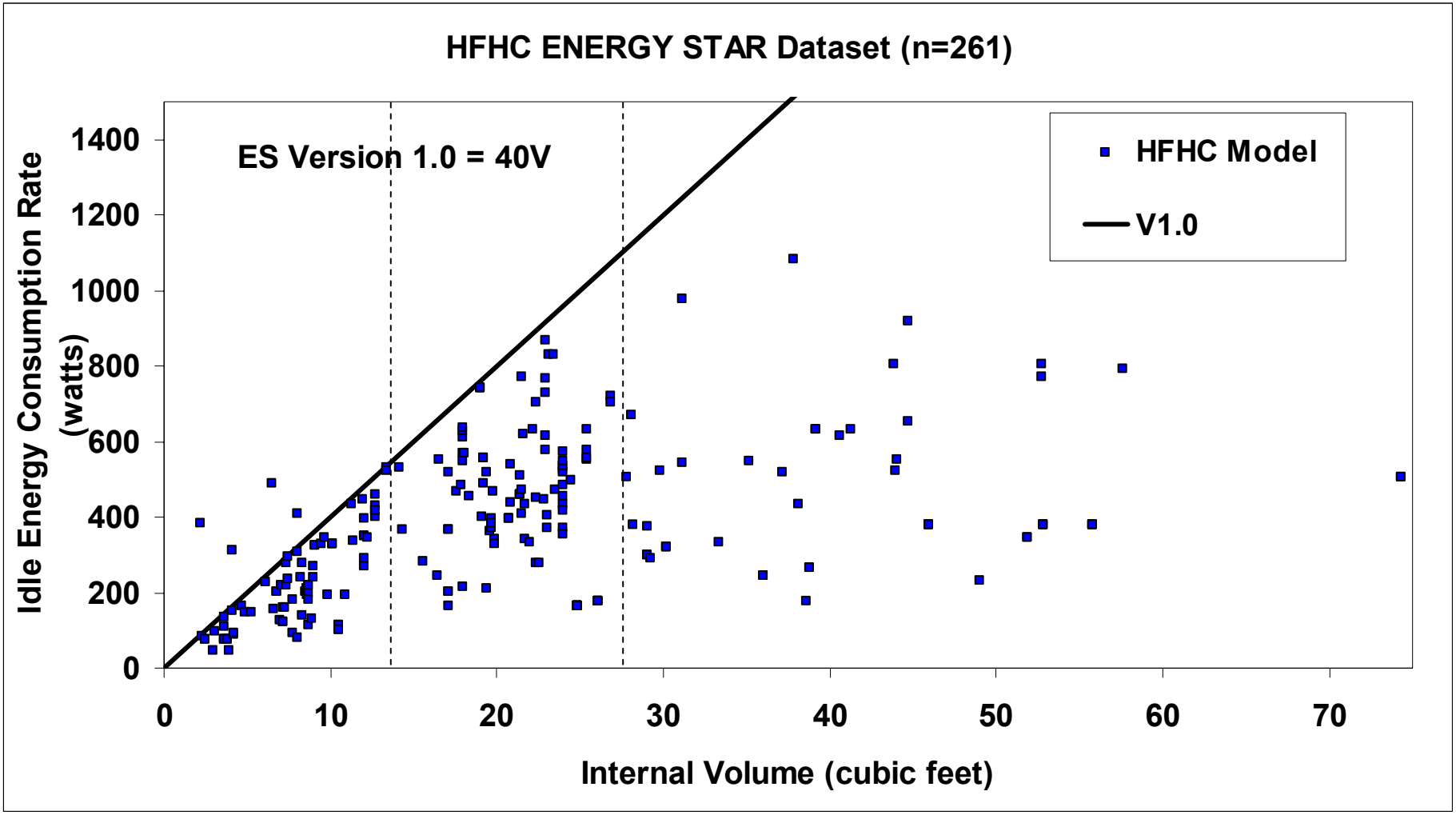
Energy Efficiency Criteria

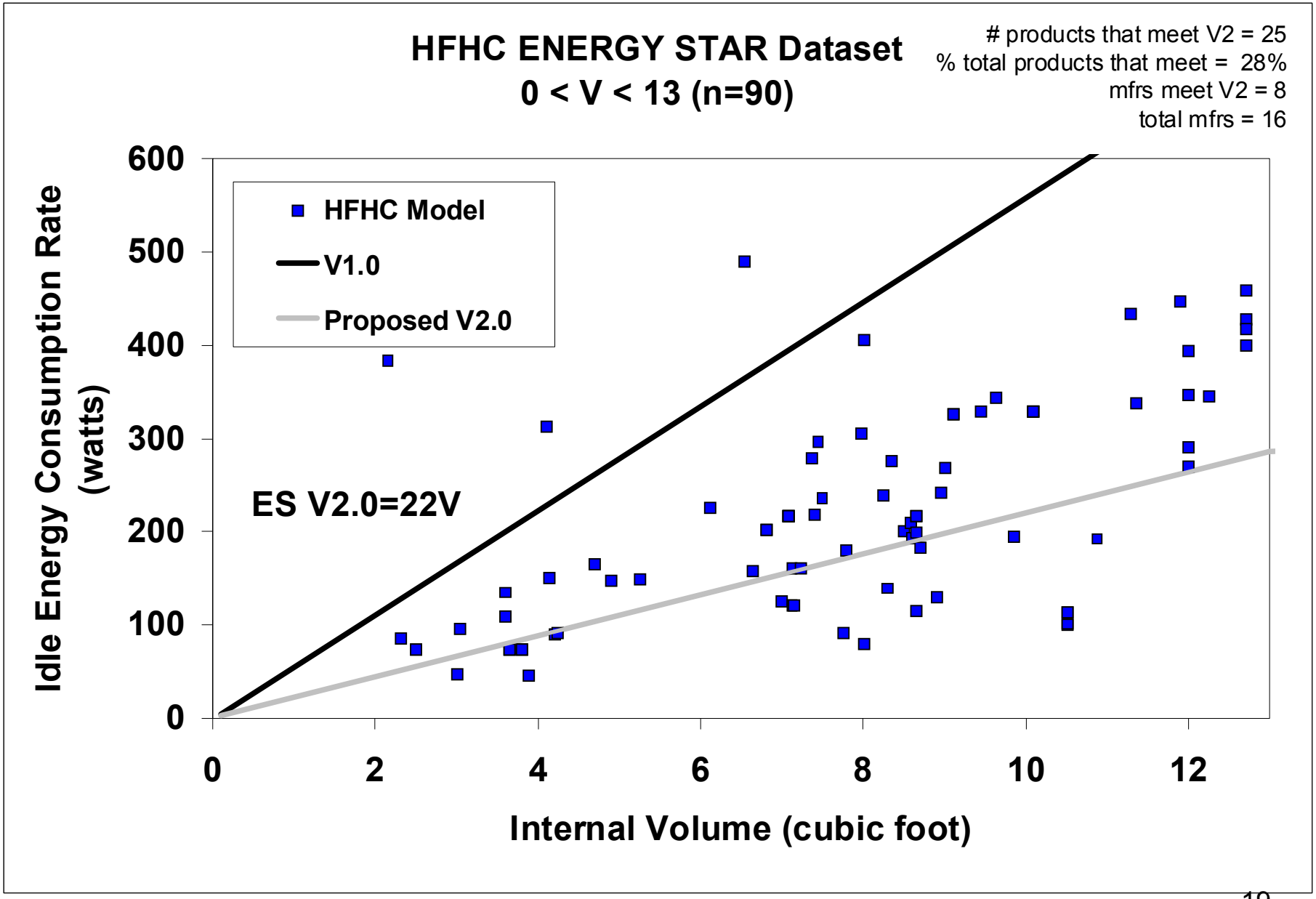
- **Rationale:** EPA set proposed efficiency requirements such that roughly 25% of models in each size category could qualify
- **Data Analysis**
  - Data used: ENERGY STAR Qualifying Product List dated January 1, 2010
  - Limited manufacturer-submitted data

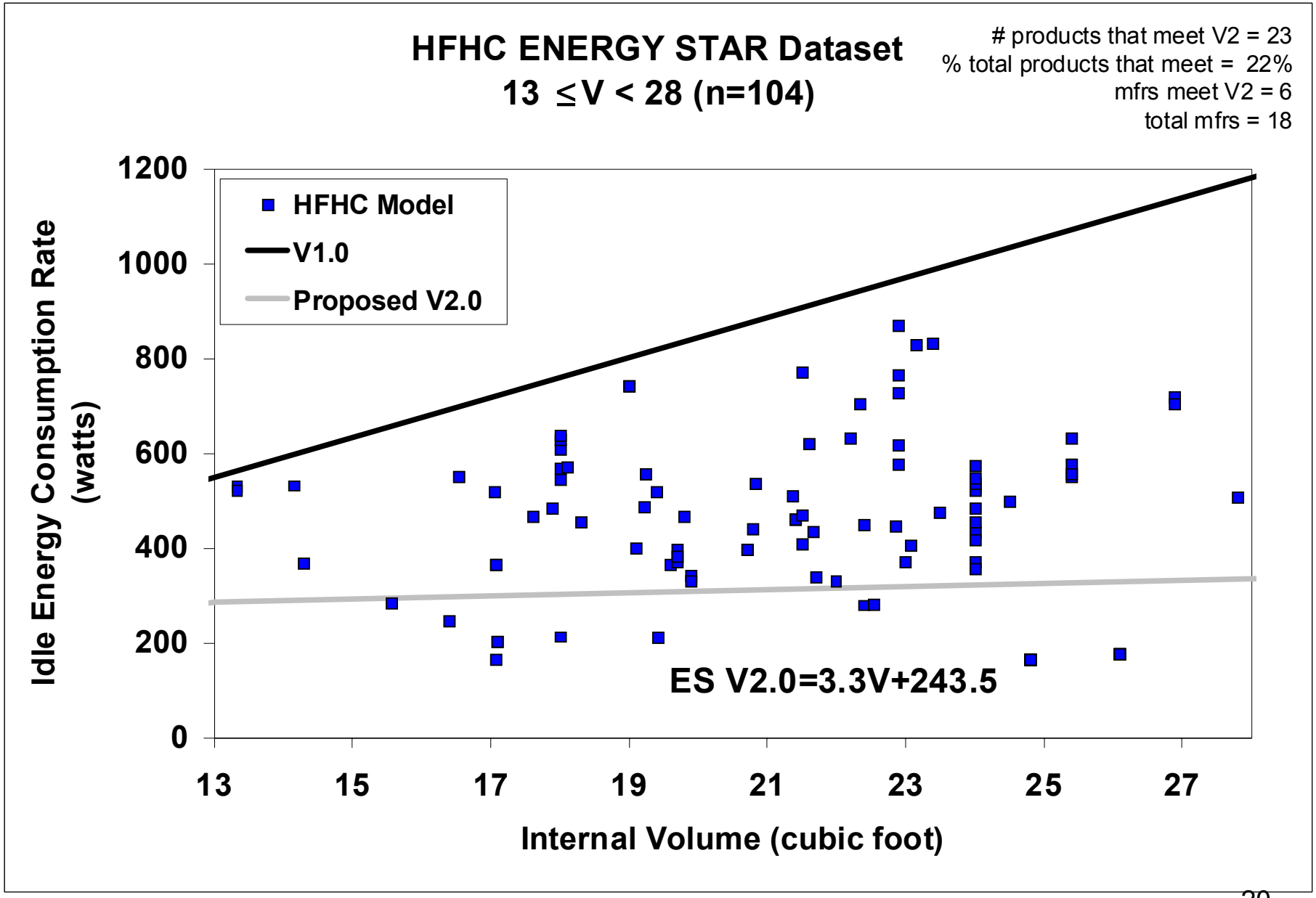
Table 1: Maximum Idle Energy Consumption Rate Requirements for ENERGY STAR Qualified Commercial Hot Food Holding Cabinets

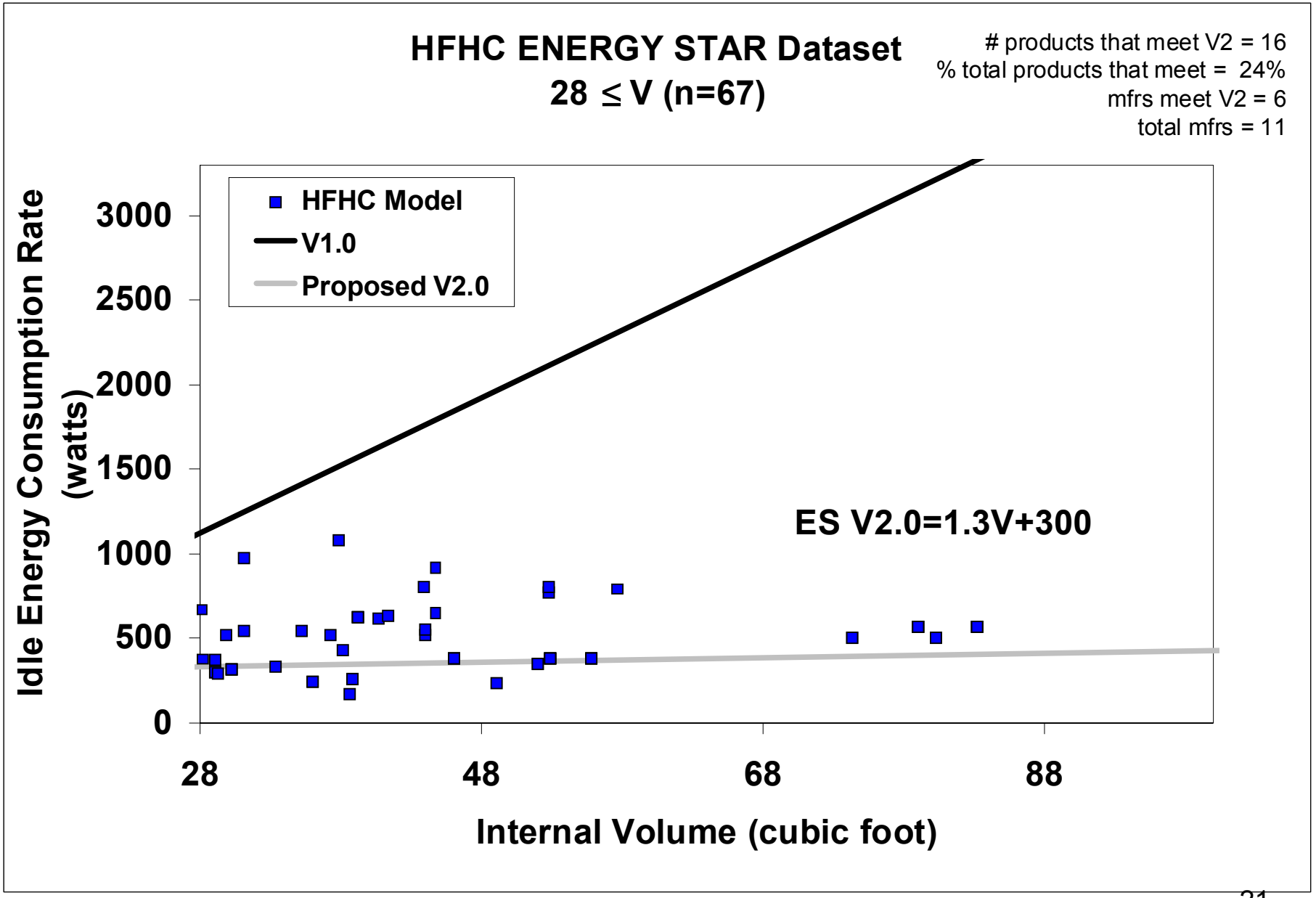
Product Volume (Cubic Feet)	Product Idle Energy Consumption Rate (Watts)
$0 < V < 13$	$\leq 22\ V$
$13 \leq V < 28$	$\leq 3.3\ V + 243.5$
$28 \leq V$	$\leq 1.3\ V + 300$

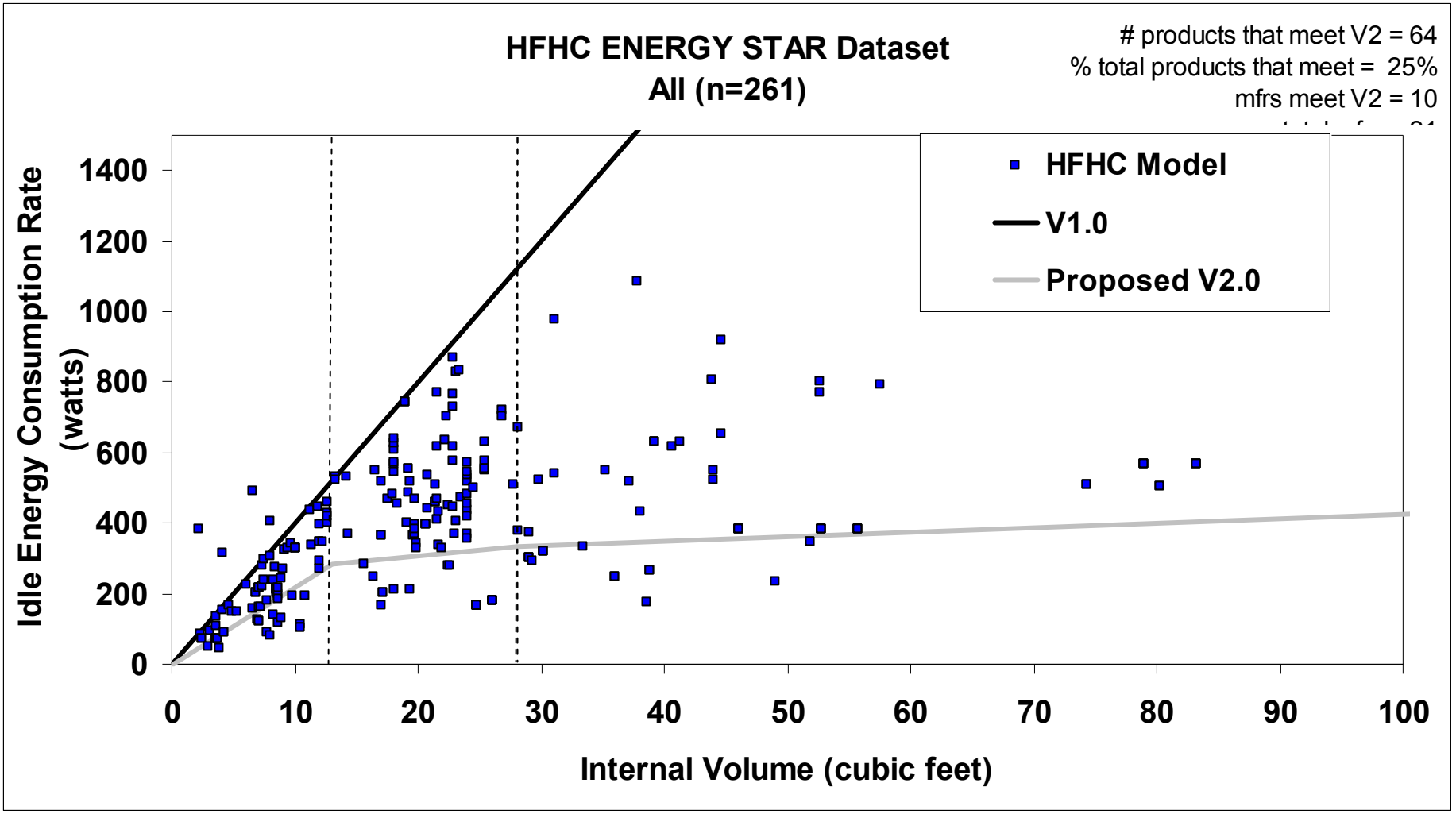
Note: V = Interior volume in cubic feet (ft^3).


HFHC ENERGY STAR Dataset (n=261)
ES Version 1.0 = 40V
HFHC Model
V1.0
Idle Energy Consumption Rate (watts)
Internal Volume (cubic feet)
0
200
400
600
800
1000
1200
1400
0
10
20
30
40
50
60
70


HFHC ENERGY STAR Dataset
0 < V < 13 (n=90)
products that meet V2 = 25
% total products that meet = 28%
mfrs meet V2 = 8
total mfrs = 16
HFHC Model
V1.0
Proposed V2.0
ES V2.0=22V
Idle Energy Consumption Rate (watts)
Internal Volume (cubic foot)
0
100
200
300
400
500
600
0
2
4
6
8
10
12


HFHC ENERGY STAR Dataset
13 ≤V < 28 (n=104)
products that meet V2 = 23
% total products that meet = 22%
mfrs meet V2 = 6
total mfrs = 18
HFHC Model
V1.0
Proposed V2.0
ES V2.0=3.3V+243.5
Idle Energy Consumption Rate (watts)
Internal Volume (cubic foot)
0
200
400
600
800
1000
1200
13
15
17
19
21
23
25
27


HFHC ENERGY STAR Dataset
28 ≤ V (n=67)
products that meet V2 = 16
% total products that meet = 24%
mfrs meet V2 = 6
total mfrs = 11
HFHC Model
V1.0
Proposed V2.0
ES V2.0=1.3V+300
Idle Energy Consumption Rate (watts)
3000
2500
2000
1500
1000
500
0
28
48
68
88
Internal Volume (cubic foot)


HFHC ENERGY STAR Dataset
All (n=261)
products that meet V2 = 64
% total products that meet = 25%
mfrs meet V2 = 10
HFHC Model
V1.0
Proposed V2.0
Idle Energy Consumption Rate (watts)
Internal Volume (cubic feet)
0
200
400
600
800
1000
1200
1400
0
10
20
30
40
50
60
70
80
90
100

Data Analysis Summary

	Total Models	# Models Qualify	% of Models Qualify
0 < V < 13	90	25	28%
13 ≤ V < 28	104	23	22%
28 ≤ V	67	16	24%
Total	261	64	25%

- **Question to Stakeholders**: Are there additional product data available to include in the analysis?

Testing/Reporting Requirement

- **Proposed Change:** Individually test and submit product data for each qualifying product model
  - May still test and report one model representing a number of different models if variations do not affect the energy performance of the model

- **Rationale:** To ensure that test data displayed on the ENERGY STAR Web site accurately represent actual product performance and to prevent end-user confusion on the energy consumption of a particular model

Effective Date

- **Proposed Date:** February 1, 2011
- **Rationale:** If finalized by April 2010, allows 9 months to transition prior to the new specification taking effect

Additional Topics

- EPA is interested in receiving product data for other equipment not currently covered under this specification
  - Proofing ovens and other humidity based holding cabinets that should be tested to the Idle Energy Rate-Wet Test

- **Question to Stakeholders**: Are there any other issues that should be discussed in preparation of Draft 2?

Proposed Timeline

November 16, 2009
EPA memo to launch process

December 9, 2009
Stakeholder Webinar kick-off

December 14, 2009
Data submission from stakeholders due

January 14, 2010
Draft 1 distributed by EPA

January 26, 2010
Stakeholder Draft 1 Webinar

February 11, 2010
Comments on Draft 1 due from stakeholders

Proposed Timeline (*cont*)

February 18, 2010
Draft 2 distributed by EPA

March 2, 2010
Stakeholder Webinar on Draft 2 (*as necessary*)

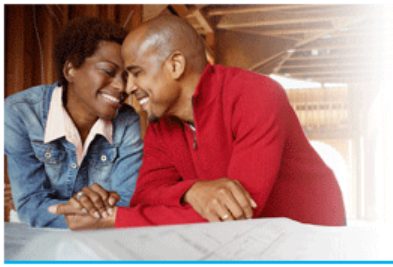
March 11, 2010
Comments on Draft 2 due from stakeholders

March 23, 2010
EPA to distribute Final Draft

April 6, 2010
Comments on Final Draft due from stakeholders

April 27, 2010
EPA to distribute Final specification

February 1, 2011
Version 2.0 effective date



Q&A

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Thank you!

Back-up Slides

ENERGY STAR Overview

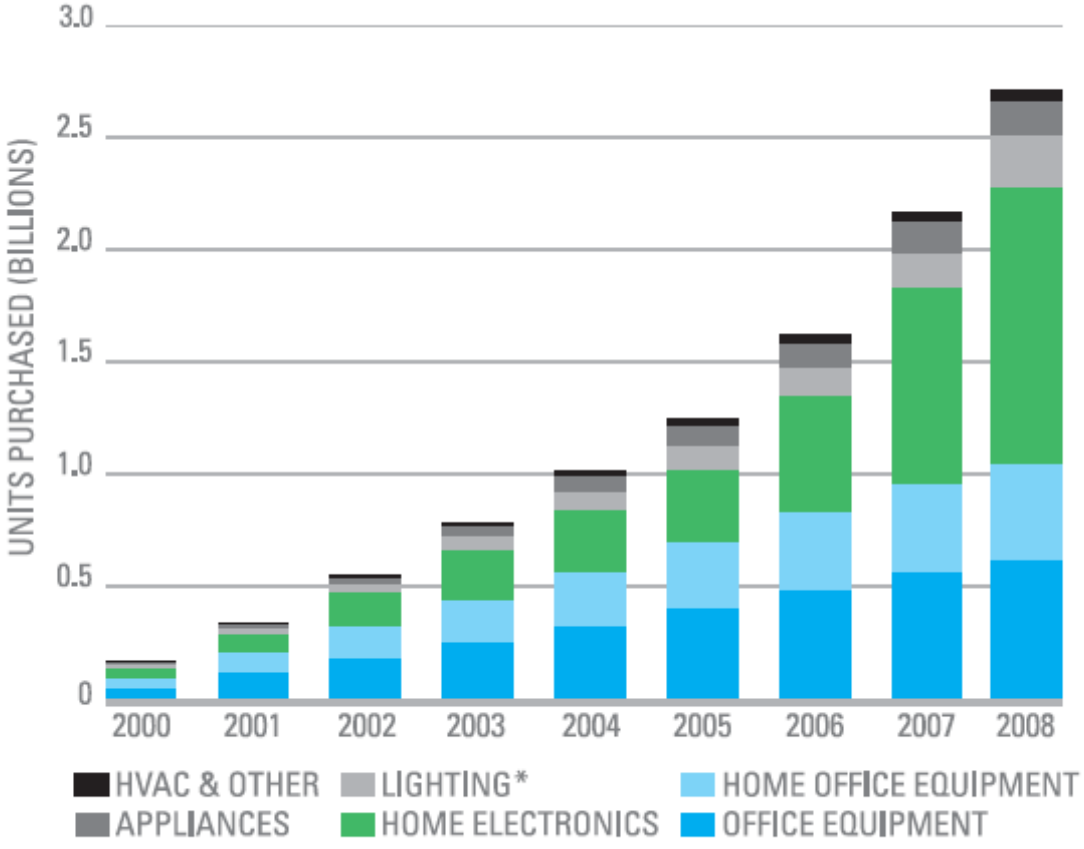
- ENERGY STAR is the government-backed symbol for energy efficiency
  - Identifies products in more than 60 categories that use less energy without sacrificing quality or performance
  - ENERGY STAR qualified products are an easy, convenient solution to energy and cost concerns
- More than 2,000 manufacturers labeling more than 40,000 product models
- More than 1,000 retail partners
- More than 550 utility partners promoting ENERGY STAR

Brand Awareness and Success

- ENERGY STAR awareness now more than 75% of U.S. households
- Of those U.S. households that have purchased an ENERGY STAR product
  - More than 75 percent report the label as influential in their purchasing decision
  - More than 80 percent report they are likely to recommend ENERGY STAR qualified products to friends
- In 2008 alone, Americans with the help of ENERGY STAR:
  - Saved about $19 billion on their energy bills
  - Prevented 43 million metric tons of greenhouse gas emissions equivalent to the annual emissions of 29 million vehicles

ENERGY STAR Success

More than 2.5 Billion ENERGY STAR qualified products purchased since 1992



*Lighting category does not include purchases of compact fluorescent bulbs.

Development Cycle

ENERGY STAR in CFS

- Restaurants and commercial kitchens are one of the highest energy consumers of buildings
  - Using approximately 250,000 Btu per square foot, roughly 2.5 times more energy per square foot than other commercial buildings

- Outfitting an entire kitchen with a suite of ENERGY STAR Qualified Commercial Food Service Equipment could save operators
  - 350 MBtu/year annually, or the equivalent of approximately $3,600