ENERGY STAR® Imaging Equipment Online Stakeholder Meeting

Draft 2 Version 1.1 Specification

August 19, 2008

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Meeting Agenda Items

- Anticipated timeline
- Overview of the TEC data analysis
  - 230V : 115V Data comparison
- Power supply functional adder
- Digital Front End concerns
- Administrative issues

Anticipated Timeline

July 16, 2008
EPA distributed Draft 2

August 6, 2008
Stakeholder comments due on Draft 2

August 16, 2008
Web-based stakeholder meeting

August 27, 2008
EPA distribute Final Draft

September 17, 2008
Stakeholder comments due on Final Draft

October 1, 2008
Distribute Final Version 1.1

July 1, 2009
Version 1.1 effective date

TEC Data Analysis

Bruce Nordman, LBNL

Overview

- Goals
- Data Sources
- “Windowing” analysis
- Experimentation
- Results

TEC - Goals

Specification line goals

- Continue to use linear segments with common slopes across TEC tables
- Ensure that products with greater capability always have a greater allowance than those with less
- Match 25% goal as well as possible across all speed ranges

No longer a goal

- Maintaining a fixed difference between spec lines (was 3 kWh/week)

TEC - Data Sources

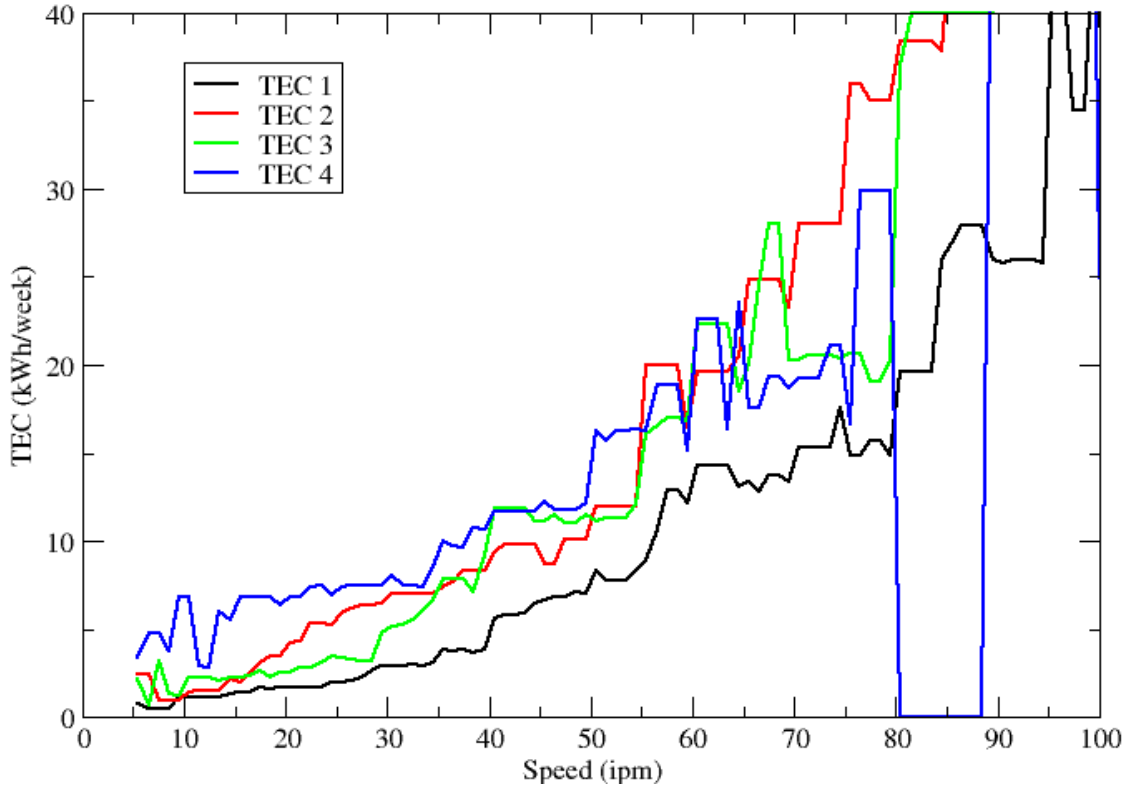
- ENERGY STAR OPS data (currently qualified only)
- Manufacturer web site information
- Edits from manufacturers
- Final data set for analysis

ENERGY STAR Tier 1

	Total	Qual.	%
TEC1	283	151	53%
TEC2	171	84	49%
TEC3	357	177	50%
TEC4	179	95	53%
Total	990	507	51%

TEC - “Windowing” analysis

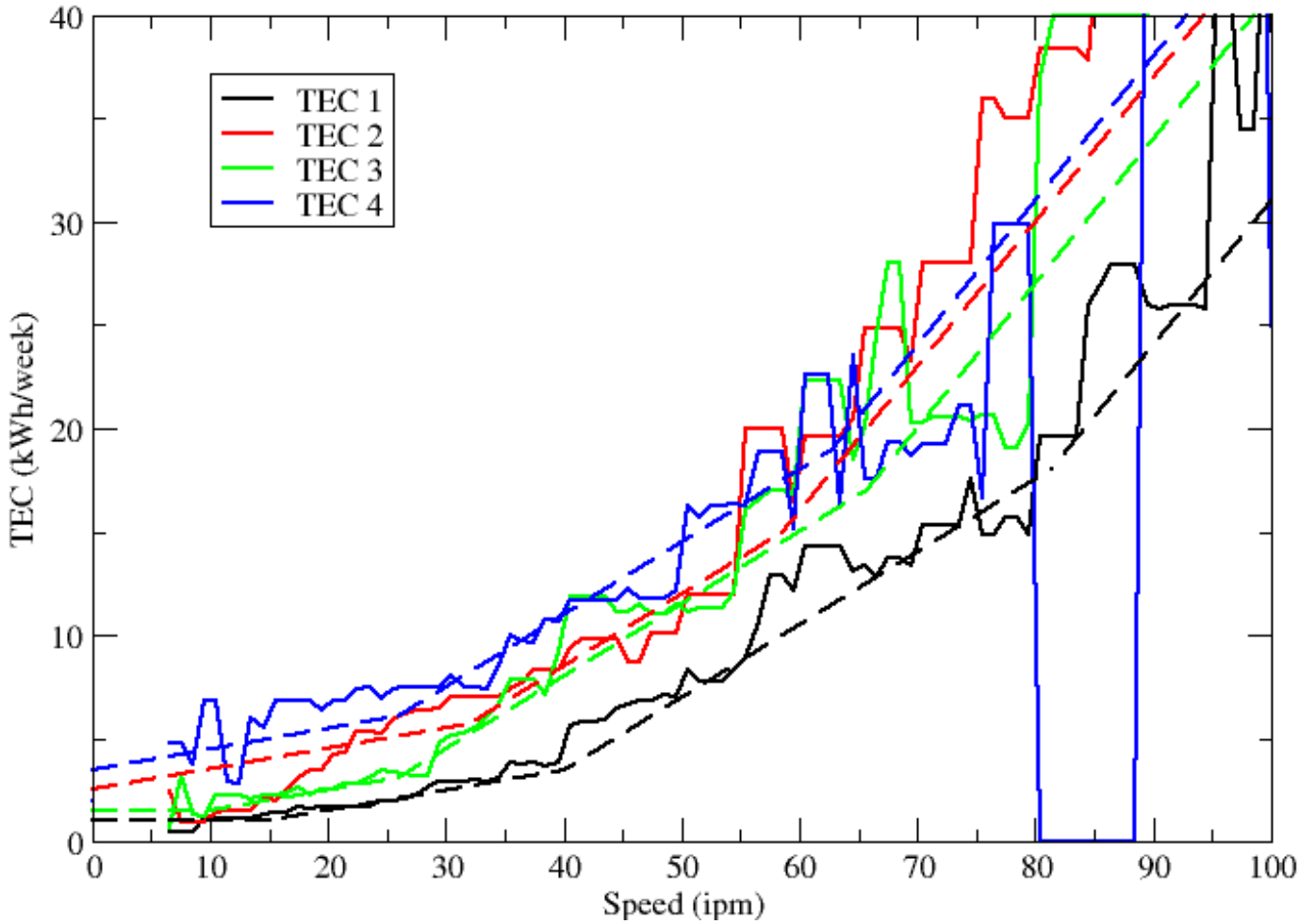
- Successive 10-ipm windows for each TEC table
  (1-10, 2-11, 3-12, 4-13, ….)
- Lines shown connect 25% points for each window
- Zero data when no models in window
- Starting point for drawing spec lines
- Don’t have TEC for non-qual. but don’t need them



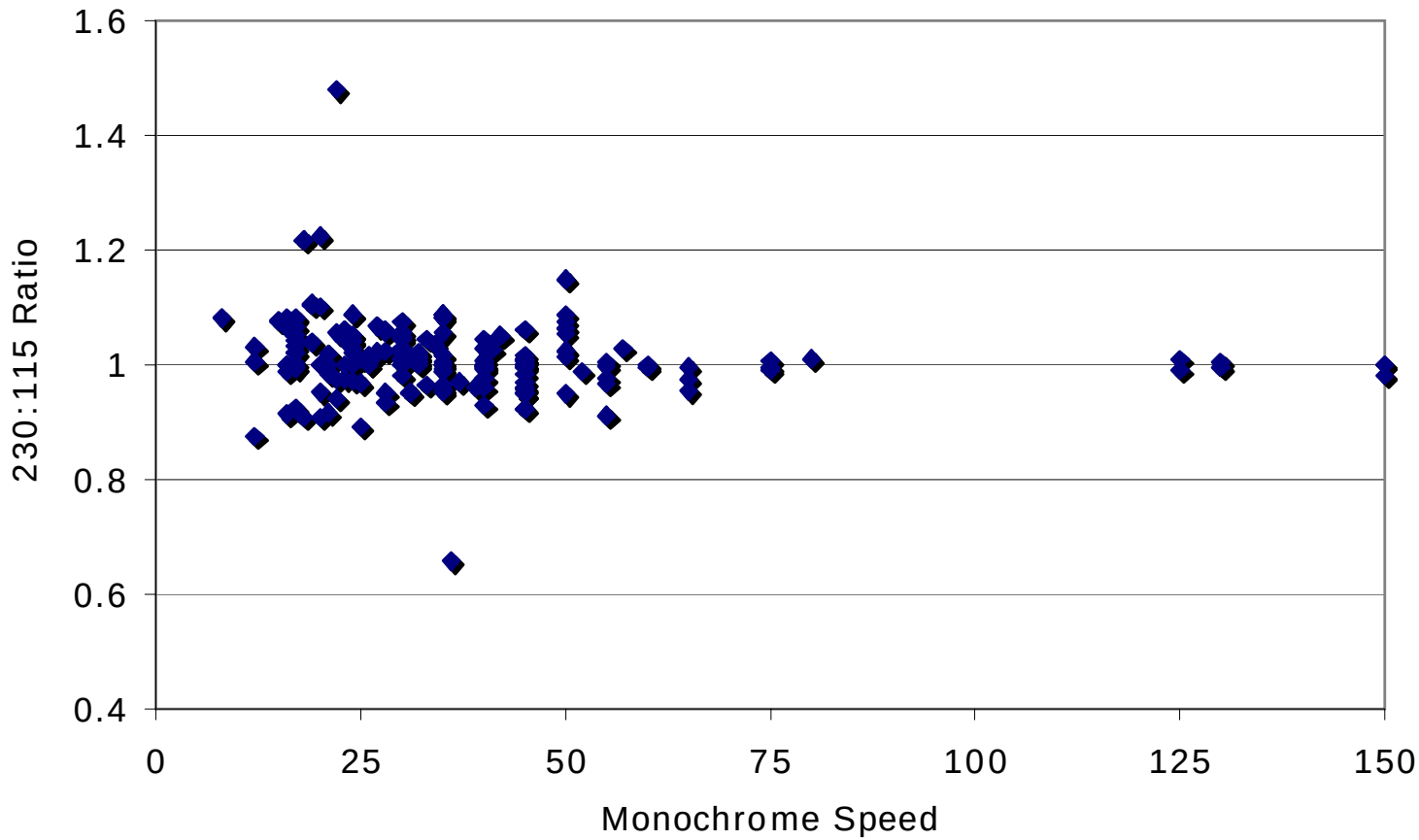
TEC - Experimentation

- Eyeball best set of common slopes from window lines
- Conclusion: need three slopes (0.1, 0.35, 0.7) rather than the two from Tier 1 (0.2, 0.8)
- Increased use of minimum TEC values at low speeds
- Tried different intercepts until 25% level was as smooth as possible across speed bins (10 ipm)
- Maintained goals outlined

TEC - Results


TEC 1
TEC 2
TEC 3
TEC 4
TEC (kWh/week)
Speed (ipm)
0
10
20
30
40
50
60
70
80
90
100

TEC Data: 230V and 115V



- For TEC products reporting both voltages: average 230V/115V ratio = 1.0153 (1.53% difference)

Power Supply Output Rating (PSOR) Secondary Functional Adder for OM Products

Bijit Kundu, ICF International

Draft 1 Specification

- Draft 1 proposal: No power supply output rating (PSOR) secondary functional adder for operational mode (OM) products

- Many stakeholders disagreed with the EPA's proposal citing power supply is a surrogate for speed and performance

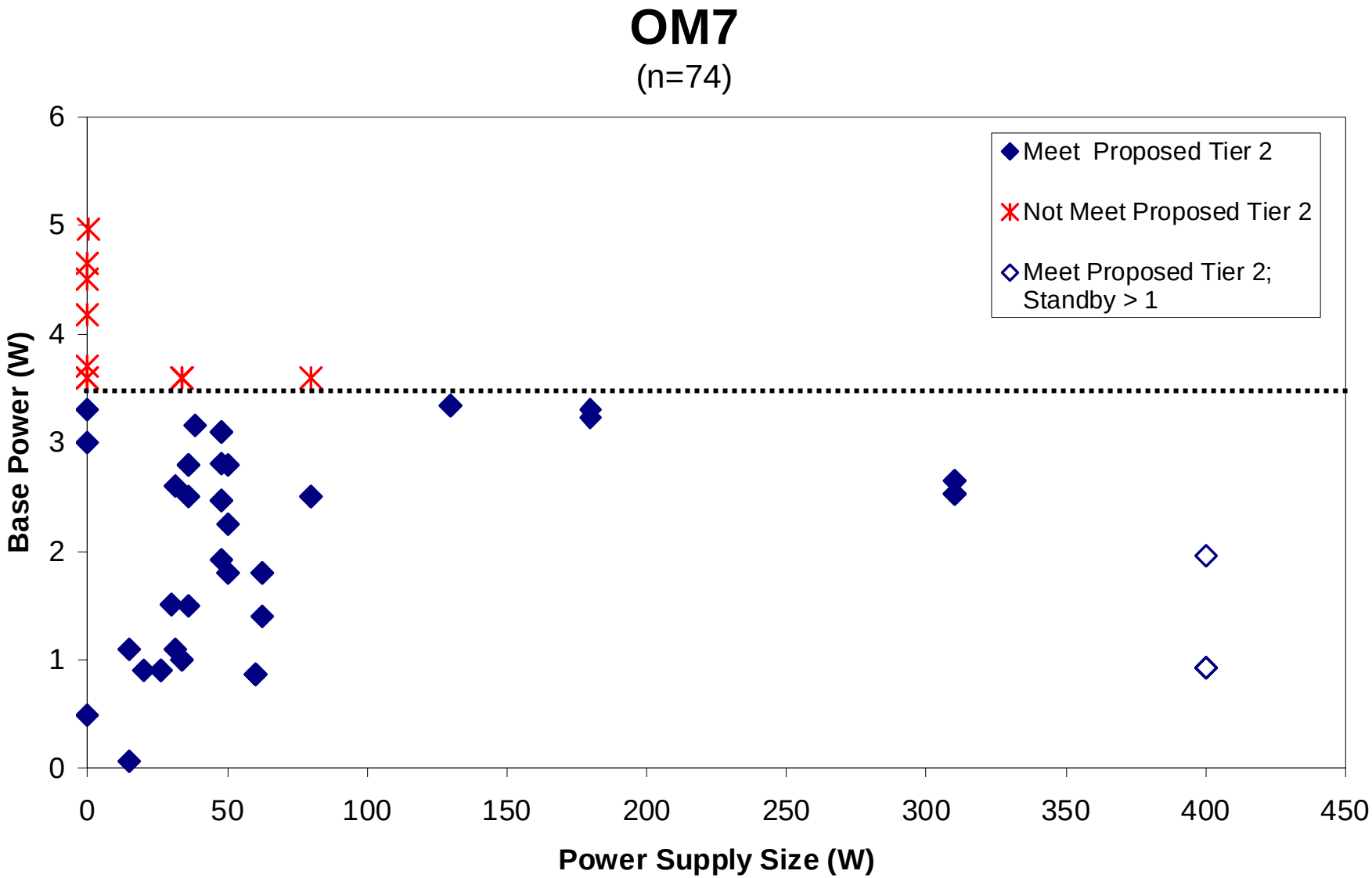
Draft 1 Specification (*cont.*)

- EPA asked stakeholders to submit data showing that the PSOR adder is needed
- Based on the data, EPA would consider applying a PSOR adder in some form for OM product types
- Very little data was received by EPA

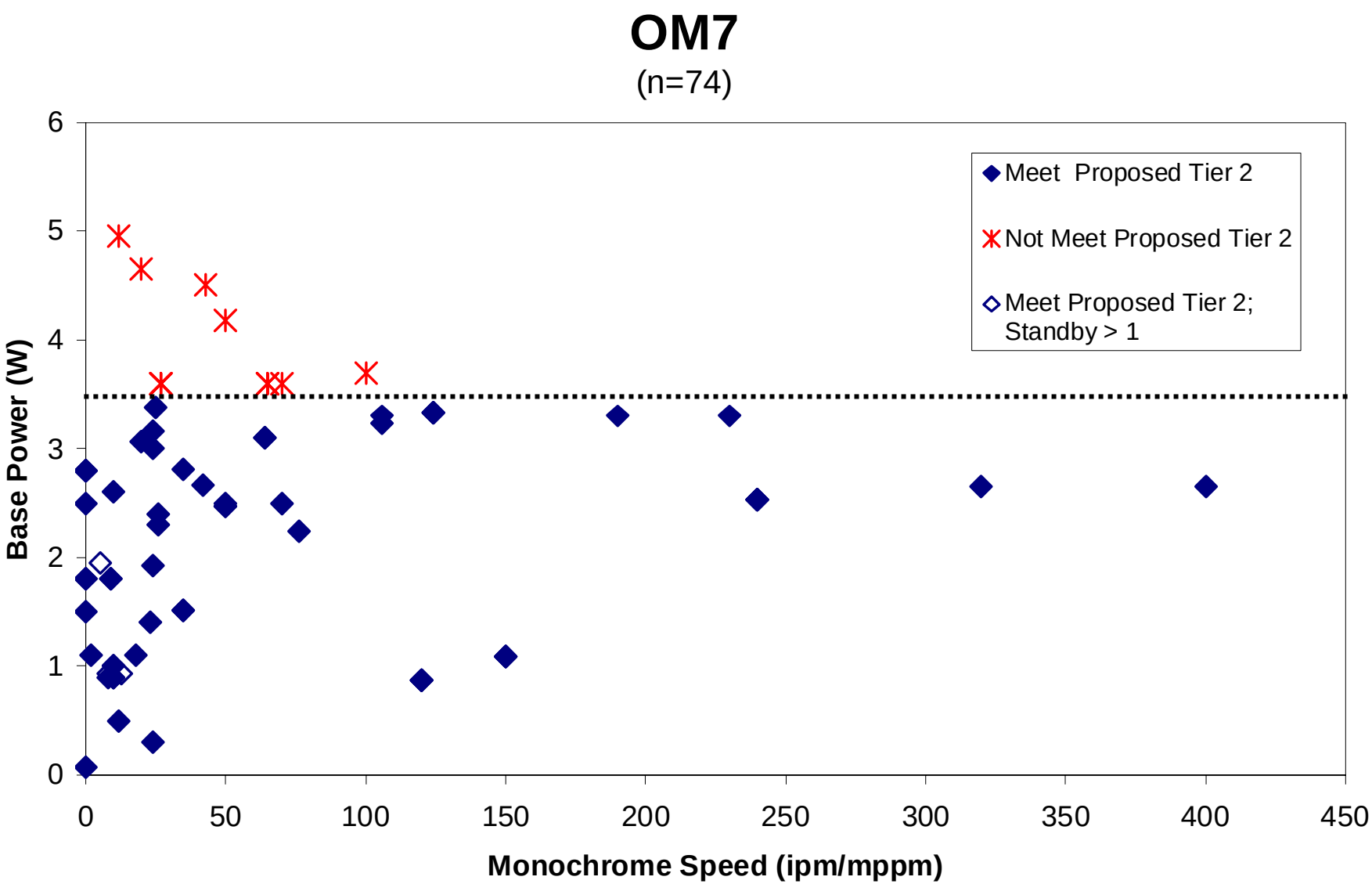
Draft 2 Specification

- In Draft 2 data analysis EPA examined each OM category based on power supply size and speed

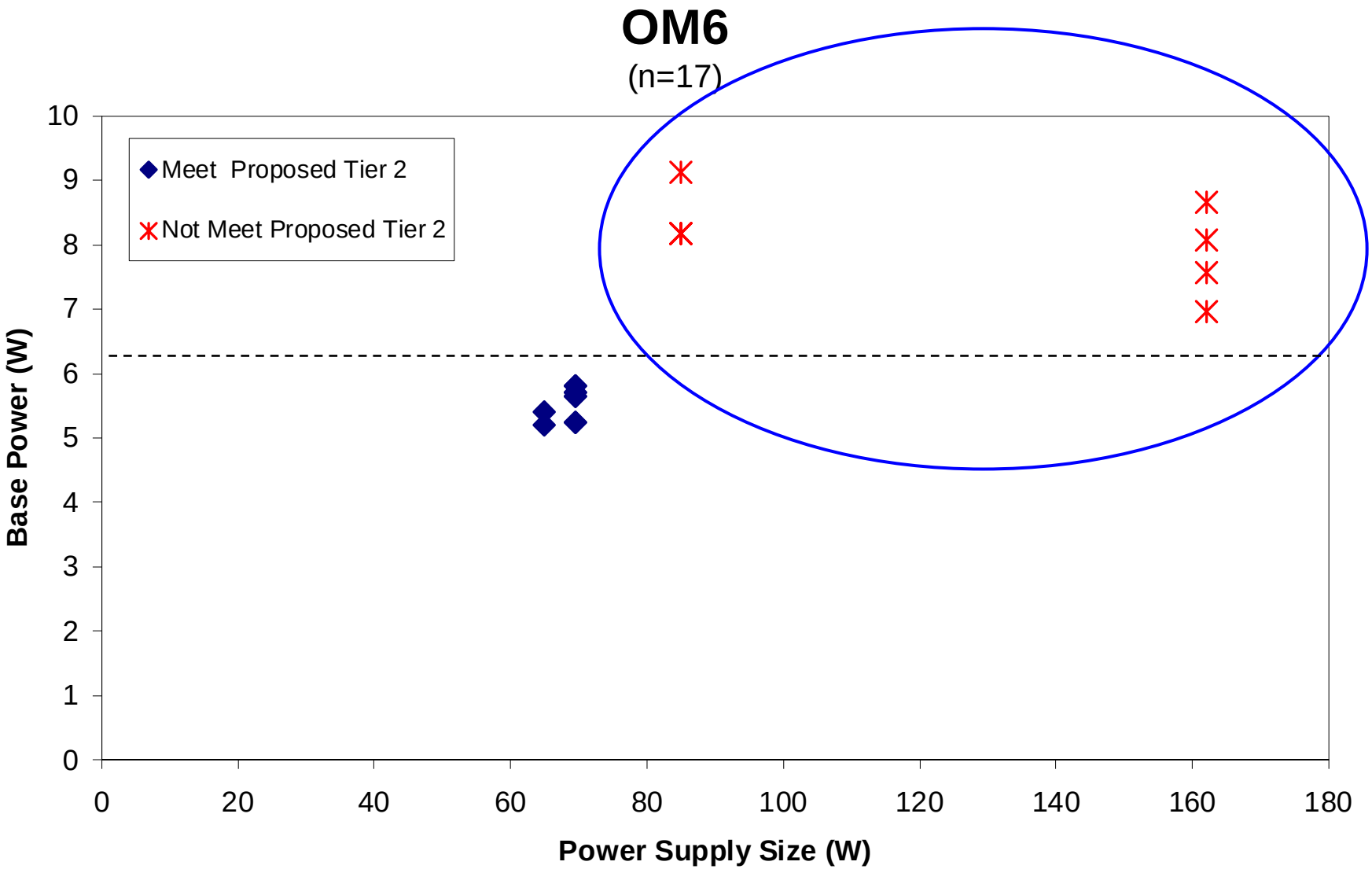
- If data showed all products with a large power supply or high speed products did not meet a proposed Sleep requirement within an OM category, EPA applied an adder based on power supply
  - Goal to capture approximately the top 25% of models available



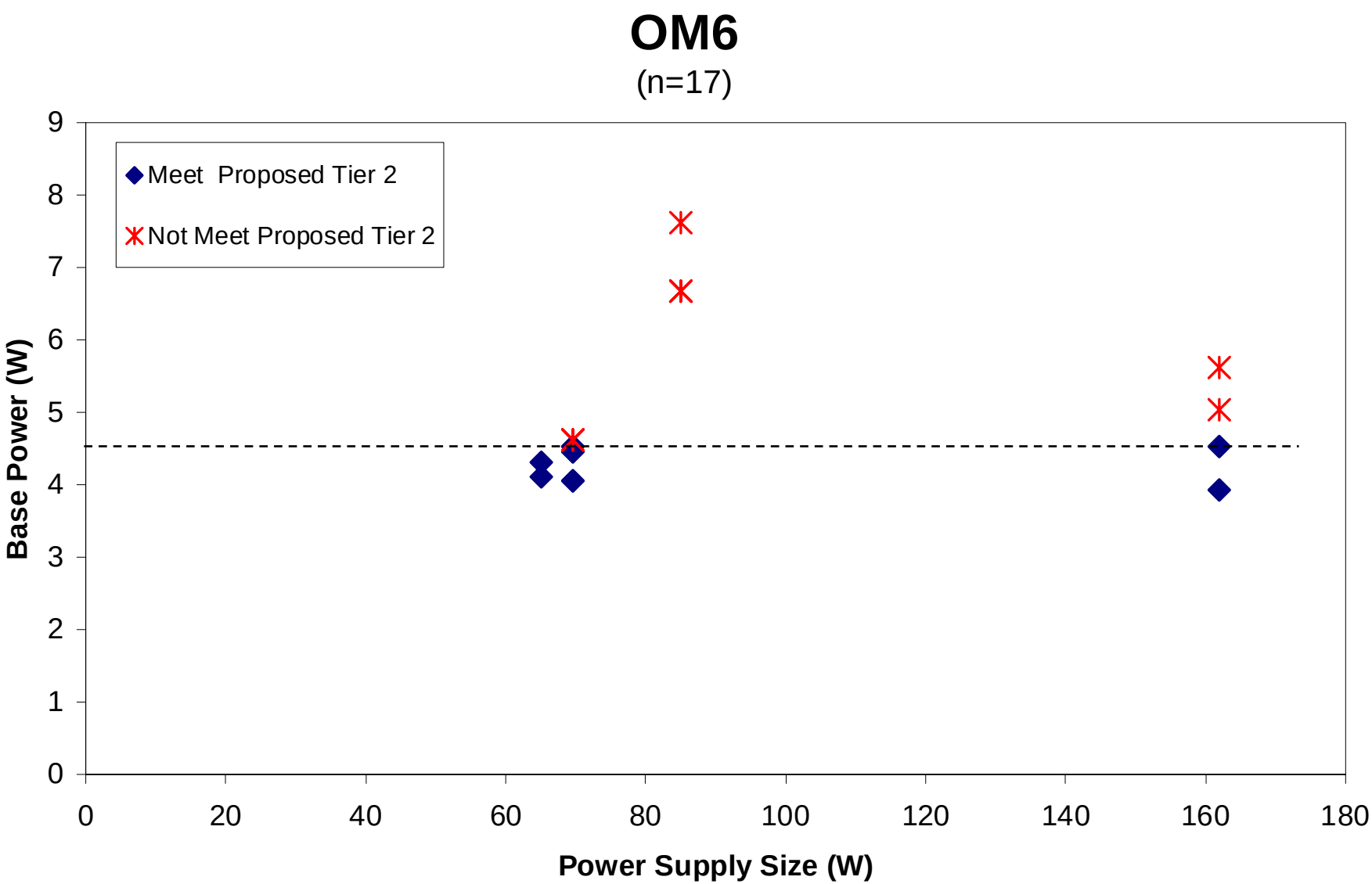
- No PSOR adder applied; products with large power supplies able to meet proposed Tier 2



- No PSOR adder applied; high speed products able to meet proposed Tier 2



- Example: No PSOR adder applied (dotted line proposed Sleep requirement)



- Example: PSOR adder applied (dotted line proposed Sleep requirement)

OM2 and OM6

- Draft 2 Proposal: Inclusion of a PSOR secondary functional adder for products in the OM2 and OM6 categories only

  For PSOR > 10 W,

  0.02 x (PSOR – 10 W)

DFE Definitions and DFE Power Supply Efficiencies

Christopher Kent, EPA

Digital Front End

- Issues addressed
  - Definition
  - Qualifying products
  - Power supply efficiency requirements

- It is EPA's intent that whenever possible the power associated with the DFE be subtracted from the TEC and OM power measurements

Definition

- Digital Front-end (DFE) – A functionally-integrated, *(network-attached server or desktop-derived)* server that hosts other computers and applications and acts as an interface to imaging equipment. other computers and applications and acts as an interface to imaging equipment. *The imaging unit must be able to produce images without the DFE present, even though some functions and capabilities are no longer operable.* A DFE provides greater functionality to the imaging product.

Type 1 vs Type 2

- A DFE will be defined as:
  - Type 1 DFE: A DFE that draws its DC power from its own AC power supply (internal or external) which is separate from the power supply that powers the imaging equipment. This DFE may draw its AC power directly from a wall outlet, or it may draw it from the AC power associated with the imaging product's internal power supply.
  - Type 2 DFE: A DFE that draws its DC power from the same power supply as imaging equipment with which it operates.

DFE types

	Definition	Power Supply Efficiency	
		Internal Power Supply	External Power Supply
Type 1 A	Draws its DC power from its own AC power source	Must meet power supply efficiency listed in Section 3	EPS must meet V2.0
Type1 B	Draws its DC power from a receptacle on or in the IE **or is hard wired to the IE**	Must meet power supply efficiency listed in Section 3	EPS must meet V2.0
Type 2	Draws its DC power internally off of the IE power supply		

Qualifying Products with DFE

- Products designated to operate with a Type 1 DFE : To qualify as ENERGY STAR under IE Version 1.1, an IE product manufactured after July 1, 2009 that is sold with a Type 1 DFE must use a DFE that meets the ENERGY STAR Imaging Equipment Digital Front End Power Supply Efficiency Requirements listed in Section 3 C.

- Products designated to operate with a Type 2 DFE: To qualify as ENERGY STAR under IE Version 1.1, an IE product manufactured after July 1, 2009 that is sold with a Type 2 DFE, manufacturers should subtract the DFE's energy consumption in Ready mode for TEC products or be excluded when measuring Sleep and Stand by for OM products.

Qualifying Products with DFE (*cont.*)

- Currently, the IE specification does not address the energy efficiency of a Type 2 (internal) DFE but instead has the manufacture subtract the internal's DFE energy consumption in ready mode for TEC products and excluded when measuring sleep for OM products.
- Tier 2 of the Imaging Specification is not suggesting changing this aspect of the specification for Type 2 (Internal) DFEs that get their DC power from the imaging product with which it operates..

Power Supply Efficiency Requirements

- **DFEs Using an Internal Ac-Dc Power Supply**
  A DFEs that gets its DC power from its own internal AC-DC power source must meet the following power supply efficiency: 80% minimum efficiency at 20%, 50%, and 100% of rated output and Power Factor > 0.9 at 100% of rated output.

Power Supply Efficiency Requirements

- **DFEs Using an External Power Supply:** A DFE that gets its power from an external power supply must be ENERGY STAR qualified or meet the no-load and active mode efficiency levels provided in the ENERGY STAR V2.0 Program Requirements for Single Voltage Ac-Ac and Ac-Dc External Power Supplies.

Process and Timeline for Recommitting to ENERGY STAR and Submitting Data

Darcy Martinez, ICF International

Joining ENERGY STAR and Reporting Data

- Requesting and signing the Partnership Agreement (PA) or Commitment Form
- Submitting Qualified Product (QP) data
- Submitting Unit Shipment Data (USD)
- Labeling products
- Summary of key events after specification publication

Signing the PA

- Manufacturers may sign a PA immediately after publication of the Final Specification on October 1, 2008
- PAs are available at www.energystar.gov/join
  - New partners: sign the PA and complete the Commitment Form
  - Existing partners: complete the Commitment Form
- Return the PA and/or Commitment Form according to the instructions in the documents
- Make sure to inform EPA of any change in primary contact information
- As of July 1, 2009, only partners that have completed the PA and/or Commitment Form and submitted QP data will appear on the partner list on www.energystar.gov

Signing the PA (cont.)

ENERGY STAR PARTNER

Partnership Agreement between ENERGY STAR® and

_____

(ENTER PARTNER NAME HERE

an ENERGY STAR® Pa

Through this agreement, _____ ("ENEI partnership with the US Environmental Protection Agency (EPA) and the Depart or more areas. ENERGY STAR Partner recognizes ENERGY STAR as a broad promote buildings, products, homes, and industrial facilities that use less energy better performance than conventional designs. ENERGY STAR Partner wishes name and/or mark in association with qualified products or homes. ENERGY ST partnership and the ENERGY STAR mark to promote energy efficiency as an ea organizations and consumers to prevent pollution, protect the global environmer ENERGY STAR Partner agrees that it is important to build and maintain the mea mark as a trustworthy symbol that makes it easy to make a change for the bette

Partner Commitments

ENERGY STAR Partner is committed to taking action in the area(s) indi Commitment Form. For the designated program area(s), ENERGY STAR Partne requirements as outlined in the following supporting documents:

- ENERGY STAR Program Requirements, defining requirements for being re program area, such as manufacturing, selling, or promoting ENERGY S consumers or organizations. Specific requirements include identifying a area of participation and updating EPA/DOE on the efforts undertaken t applicable, these include ENERGY STAR eligibility criteria defining the specifications that must be met for use of the ENERGY STAR mark on buildings, homes, and products; and

- ENERGY STAR Identity Guidelines, describing how the ENERGY STAR na Partner will adhere to these guidelines and ensure that its authorized re advertising agencies, dealers, and distributors, are also in compliance.

ENERGY STAR PARTNER

ENERGY STAR Commitment Form: Program Area(s) Where ENERGY STAR Partner Commits to Fulfill Program Requirements

Partner Name:	
Date:	

Partner agrees to fulfill the Program Requirements of each program area checked below.

Promote ENERGY STAR as an ENERGY Efficiency Program Sponsor' in the:
- ☐ Consumer Product Market
- ☐ Residential New Construction Market
- ☐ Existing Commercial Buildings Market
- ☐ New Commercial Buildings Market
- ☐ Industrial Market

**Such as states, utilities, or regional program coordinators.*

Help Clients Improve Their Energy Performance
Commercial and Industrial Service and Product Providers, supporting the:
- ☐ Existing Commercial Buildings Market
- ☐ New Commercial Buildings Market
- ☐ Industrial Market

Offer Commercial Financing
- ☐ Mortgages for Energy-Efficient Homes

** Please refer to the ENERGY STAR Partnership Agreement for Lenders.*

Label and Promote ENERGY STAR Qualified Homes
- ☐ Home Builders/Developers
- ☐ Home Energy Raters

** Please refer to the ENERGY STAR Partnership Agreement for Home Builders and Verification Organizations.*

Promote ENERGY STAR Qualified Products
- ☐ Retailers/E-tailers
- ☐ Buying Groups

Home Electronics
- ☐ Audio Equipment and DVD Products
- ☐ Digital-to-Analog Converter Boxes (DTAs)
- ☐ Set-top Boxes
- ☐ Telephony
- ☐ Televisions and VCRs

Heating, Ventilation, and AC Products
- ☐ Boilers
- ☐ Central ACs and Air-Source Heat Pumps
- ☐ Furnaces
- ☐ Geothermal Heat Pumps
- ☐ Light Commercial HVAC
- ☐ Programmable Thermostats
- ☐ Residential Ceiling Fans
- ☐ Residential Ventilating Fans

Home and Building Envelope Products
- ☐ Residential Insulation Products
- ☐ Roof Products
- ☐ Windows, Doors and Skylights
- ☐ Window Components

Lighting Products
- ☐ Decorative Light Strings
- ☐ Residential Light Fixtures
- ☐ Screw-Based Compact Fluorescent Lamps (CFL)

Office Equipment
- ☐ Computers
- ☐ Imaging Equipment
- ☐ Monitors

EPA

Submitting QP Data

- At a TBD date in 2009, the online product submittal tool (OPS) will be modified to accommodate additional data fields
- Manufacturers must use OPS to add data for currently-qualified products they wish to continue to label under 1.1
- On May 1, 2009, OPS will no longer accept models for qualification under 1.0
- On July 1, 2009, OPS will evaluate all products in database under 1.1
  - QP lists run after this date will only display 1.1 models.

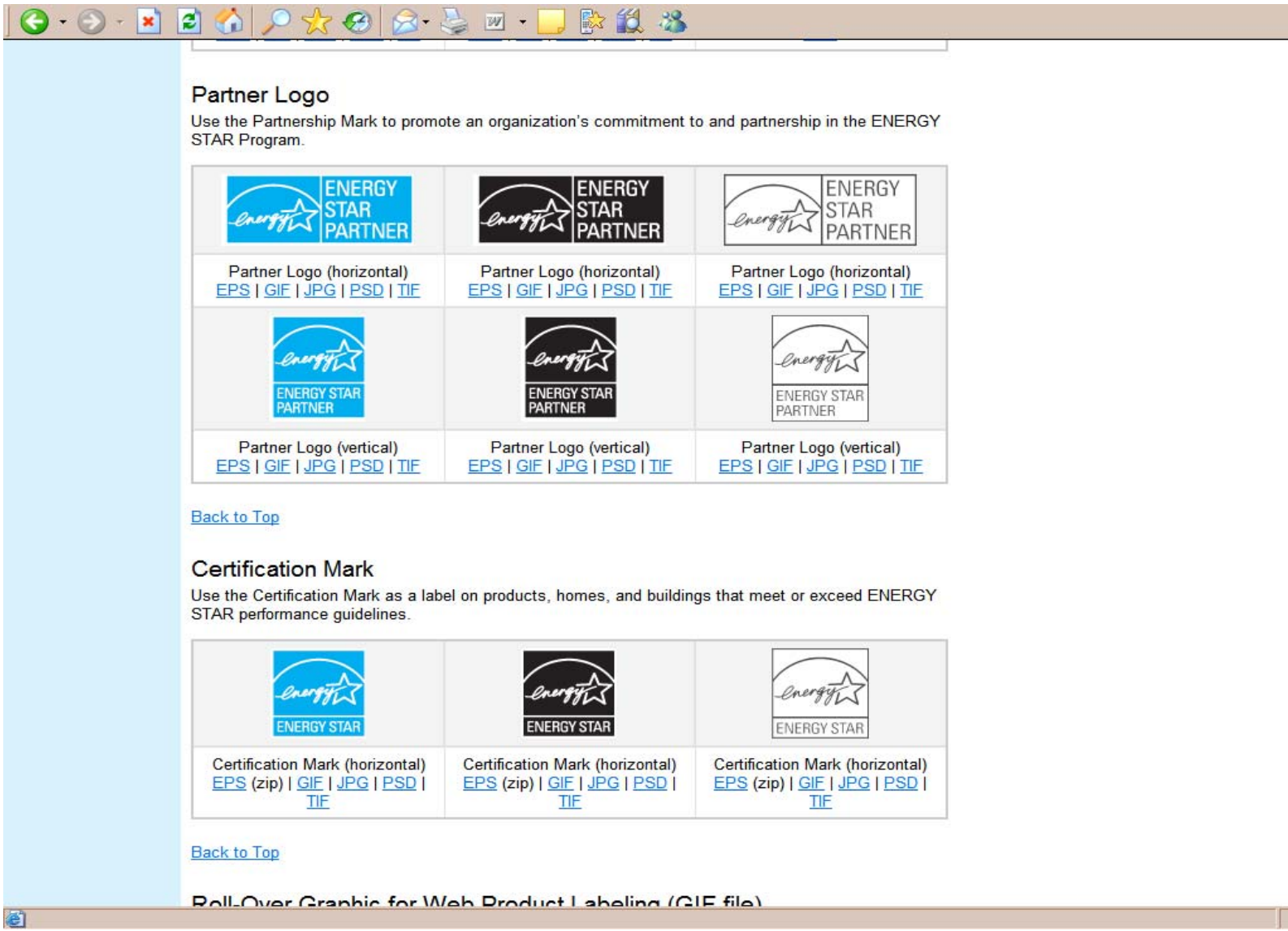
Submitting USD

- Submit unit shipment data no later than March 31 for the previous calendar year
  - First data collection will cover 2008 calendar year
  - Format developed by EPA and vetted with partners in advance
  - Option for submitting through third party
  - Visit www.energystar.gov/usd for examples of summary reports

Labeling Products

- Products manufactured after July 1, 2009 must meet the 1.1 specification in order to be labeled and referred to as ENERGY STAR qualified
- Models that were qualified under 1.0 may continue to make their way through the distribution chain bearing the ENERGY STAR mark
- Any new partners will be provided with usernames and passwords for accessing the ENERGY STAR marks and tools

Access to the ENERGY STAR Marks



Partner Logo

Use the Partnership Mark to promote an organization's commitment to and partnership in the ENERGY STAR Program.

Partner Logo (horizontal) EPS | GIF | JPG | PSD | TIF	Partner Logo (horizontal) EPS | GIF | JPG | PSD | TIF	Partner Logo (horizontal) EPS | GIF | JPG | PSD | TIF
Partner Logo (vertical) EPS | GIF | JPG | PSD | TIF	Partner Logo (vertical) EPS | GIF | JPG | PSD | TIF	Partner Logo (vertical) EPS | GIF | JPG | PSD | TIF

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Certification Mark

Use the Certification Mark as a label on products, homes, and buildings that meet or exceed ENERGY STAR performance guidelines.

Certification Mark (horizontal) EPS (zip) | GIF | JPG | PSD | TIF	Certification Mark (horizontal) EPS (zip) | GIF | JPG | PSD | TIF	Certification Mark (horizontal) EPS (zip) | GIF | JPG | PSD | TIF

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Roll-Over Graphic for Web Product Labeling (GIF file)

Anticipated Timeline

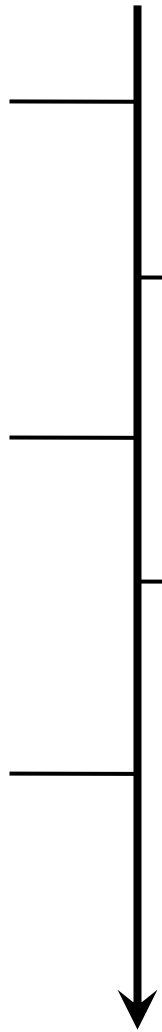
October 1, 2008
Distribute Final Version 1.1. Manufacturers may commit to specification at any time.

March 31, 2009
2008 USD due.

July 1, 2009
Version 1.1 effective date.

TBD, 2009
OPS is modified to accommodate expanded data.

May 1, 2009
OPS no longer accepts qualification of products under 1.0.



EPA

Outstanding questions?

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Action Items from Webinar

1. **EPA** will ensure multiple manufacturers are captured under certain speed ranges in TEC requirements.
2. **EPA** will confirm that the proposed TEC requirements capture approximately 25% of the models by speed bin.
3. **EPA** will further investigate the TEC requirements to ensure that markets dominated by 230V are not disadvantaged by the proposed requirements derived from 115V product data.
4. **EPA** will revisit product data from OM7 to account for modifying the adder relating CCFL lamps in scanners.
5. **EPA** will provide available general guidance on rationale for revising ENERGY STAR specifications.
6. **Industry** will provide feedback to EPA on highlighted sections of the DFE definition (Slide 23).
7. **Industry** will provide information to EPA about general timetables for implementing changes to marketing and product material.