ENERGY STAR Qualified Imaging Equipment

Specification Revision

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Craig Hershberg

US EPA

Product Manager

ENERGY STAR for Office Equipment & Consumer Electronics

Darcy Hoffmeyer

ICF Consulting

Meeting Overview

- Welcome & introductions (10:00 – 10:15)
- Meeting objectives (10:15 – 10:20)
- Presentation of Directional Draft (10:20 – 10:55)
  - Background
  - Rationale for Directional Draft
  - Main content areas
  - Feedback received
- Next steps & timeline (10:55 – 11:00)
- Open discussion (11:00 – 12:00)

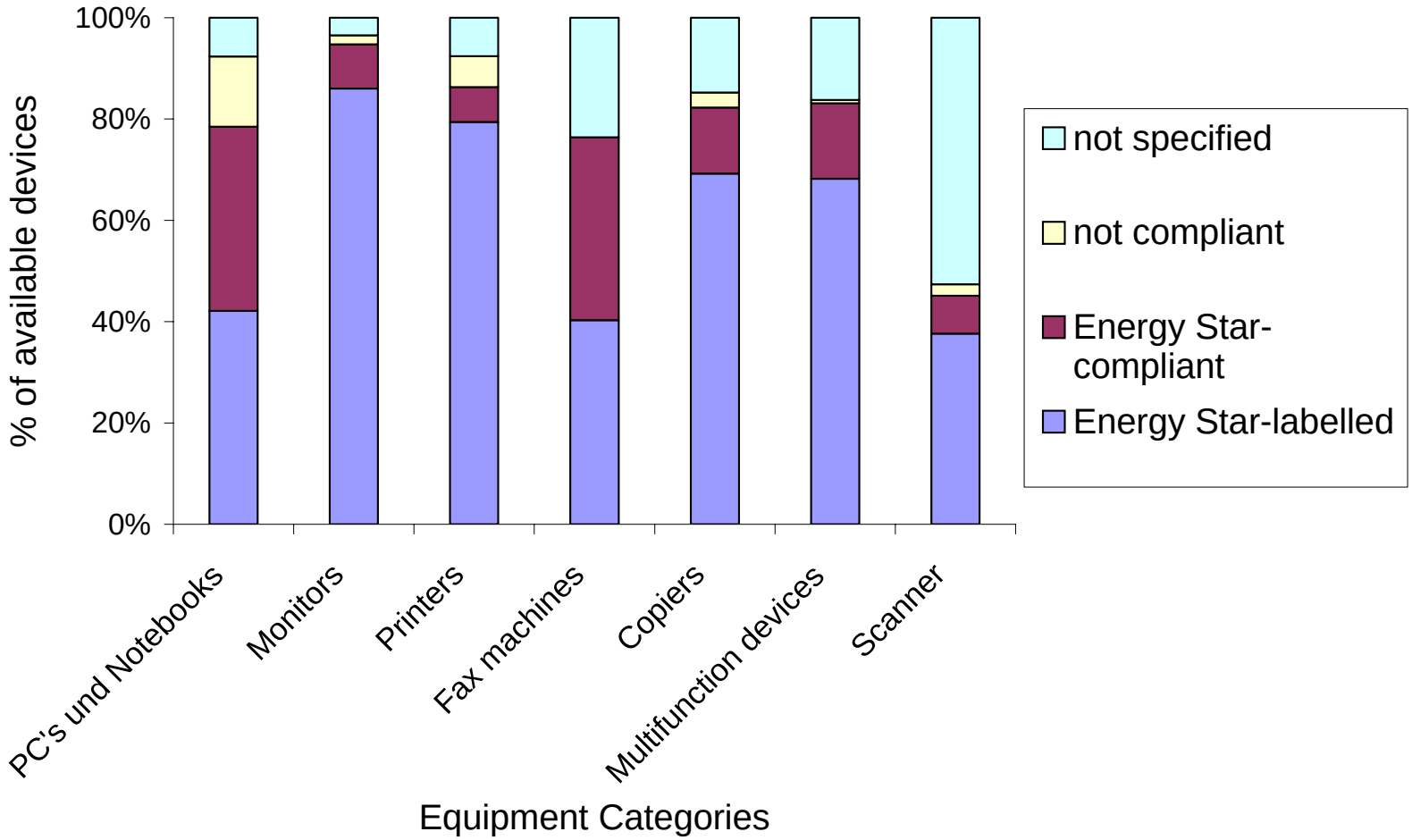
Meeting Objectives

- Understand everyone's role in this process
- Identify areas for future contribution
- Ensure understanding of what EPA has done & why
- Exchange ideas openly
- Develop thoughts for expanding the Directional Draft into a First Draft

The Need for Revision

- Current specifications are outdated
- Conclusions from Lawrence Berkley National Laboratory's (LBNL) recent imaging equipment metering:
  - +90% of products metered met current specification
  - Results show top quartile of products are better than current specification
- Similar situation in Europe

Similar Situation in Europe



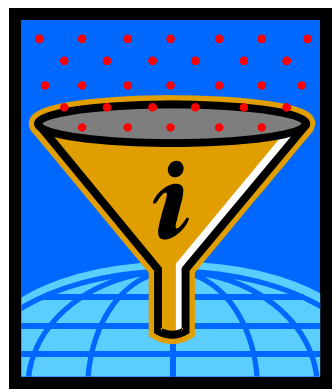
Percentages of ENERGY STAR labeled & ENERGY STAR compliant products on the Austrian supplier market.

Developing the Directional Draft

- In early 2003, EPA began revising imaging specifications under a single effort
  - Begins with market & engineering analysis
  - Review of Guiding Principles
  - Industry meetings & feedback
- Release of Directional Draft for comment
- Where are we today?

Directional Draft - Rationale

- Summarizes thinking to date
- Proposes a possible framework for specification
- Precedes a First Draft
- Identifies objectives of Directional Draft & revision process, & timeline
- Sets some specification levels & has placeholders
  - Recovery time from sleep is TBD under the operational mode track
- Responds to ITI's proposal & presents stakeholder concerns heard to date
- Strongly encourages feedback



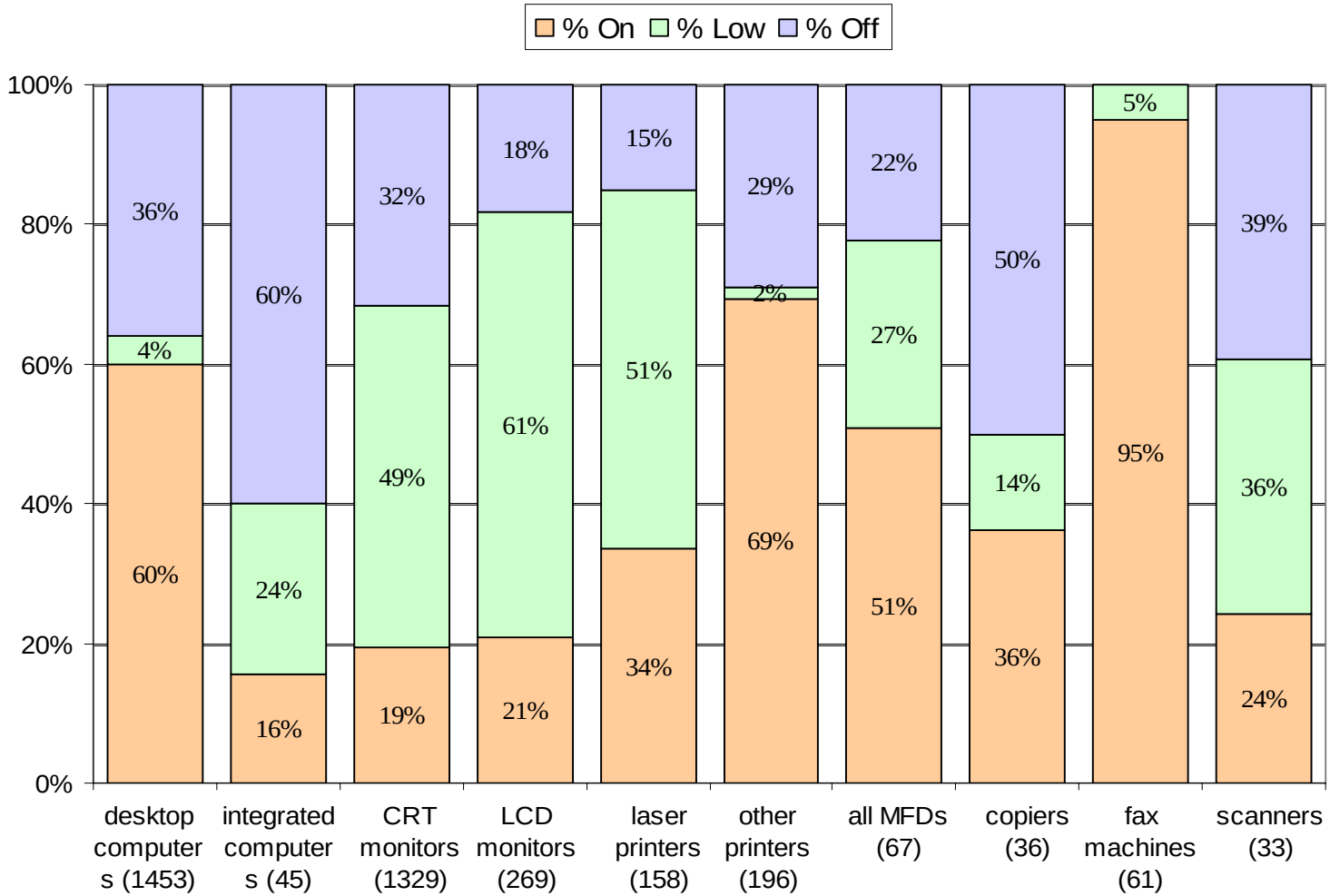
Directional Draft – Main Content Areas

- A single umbrella specifications document covering all imaging equipment products
- A two-tracked approach
  - Typical Electricity Consumption (TEC) concept for copiers & MFDs
  - Traditional operational mode approach (sleep, low power) for printers, fax machines, scanners, mailing machines
- Appendices
  - Identify additional items for discussion

Directional Draft – Rationale for Considering a TEC Approach

- Improve energy savings despite low PM enabling rates &/or long default times
- Address products' power consumption throughout total duty cycle
- Provide manufacturers flexibility to:
  - Reduce energy consumption in any or all modes
  - Improve user satisfaction
- Borrows from existing international standards

Power States of Office Equipment*



*From LBNL's 2003 National Night Audits of Office and Miscellaneous Equipment

Directional Draft - Operational Mode Approach Objectives

Group similar products

Printer/fax combos

MFDs

Group marking tech. more appropriately

Serial color EP

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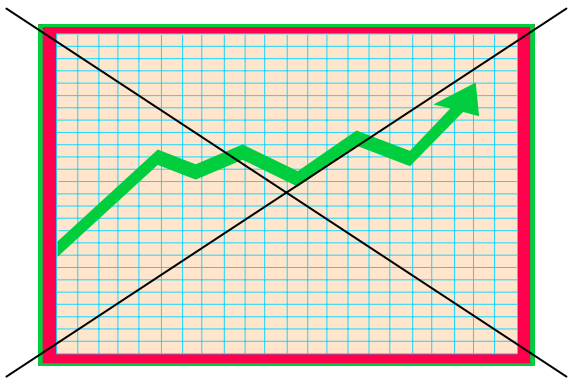
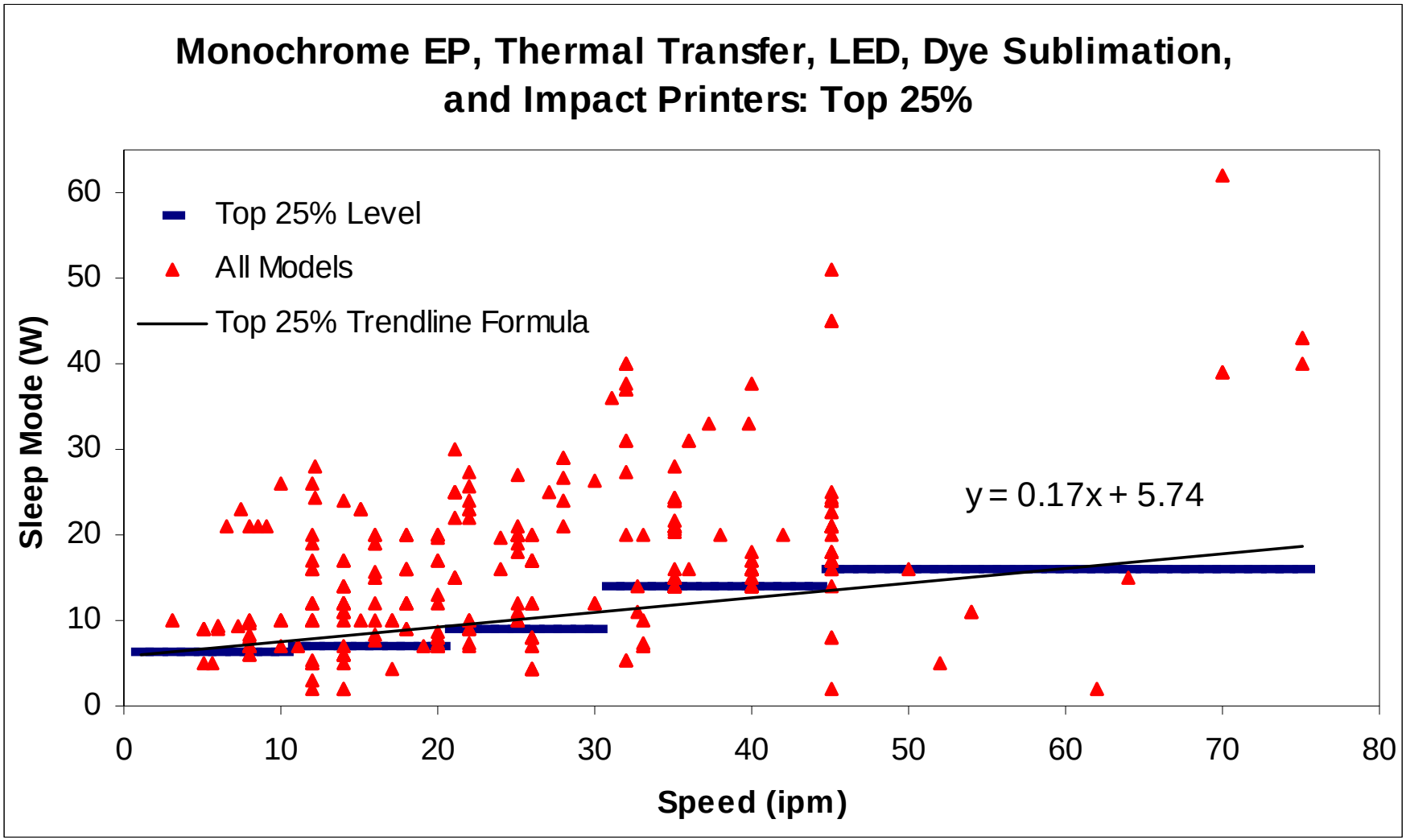
Parallel color EP

Use linear formulas



Seek to recognize approximately 25% of the market at the time the specification is set

Operational Mode Approach



Analysis of Compliance

Product	% Products that Meet	% Partners with 1 Compliant Product
Fax Machines	28	55
Ink Jet Printers	29	55
Non-IJ Monochrome Printers	20	68
Non-IJ Color Printers	17	56
Large Format Printers	32	44
Scanners	25	53
Mailing Machines	18	100

Directional Draft - Appendices

- Definitions
- Partner Commitments addressing labeling & submission of shipment data
- Discussion of grandfathering & remanufacturing
- Summary of partner-reported data used to derive formulas
- Guiding principles
- Stakeholder questions

Feedback on Directional Draft - Scope

- Feedback received from 18 entities including **manufacturers**, **international program implementers**, and **interest groups** in:
  - Austria
  - Canada
  - Denmark
  - Germany
  - Japan
  - The Netherlands
  - The US

TEC Approach

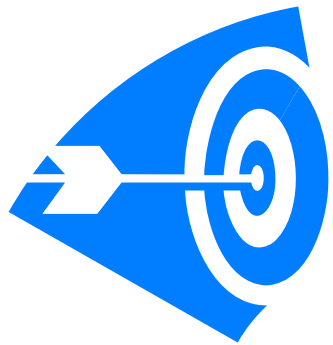
- Many respondents support TEC concept
- Two concerns raised:
  - Ensuring efficiency tests in lab reasonably reflect efficiency in the “real world.”
  - The need for more information on how TEC efficiency targets will be set in order to evaluate approach

Product Categorization

- Which products should be addressed by TEC?
  - How should specification and test method be adapted?
- Grouping products by service, and not technology
- Dividing by use (business vs. consumer)
- Niche products
- The need for separate specifications if networked

TEC Formula

- Clarify DD formula (Wh/h)
  - Specify time period to avoid confusion with cancellation of units
- Various time period suggestions
  - 1 day or 24 hours
  - 1 week
  - 1 month
- Differing opinions on including Warm-up from Off
  - Not necessary if equipment is left on continually



TEC Test Procedure

- Borrow from ASTM F757 and ISO554
- Some advocate compressed testing timeframe while others prefer something more representative of actual use
- Other issues:
  - Simplex vs. duplex
  - Sheet volume per job
  - Paper size and weight

Product Usage

LOCATION	APR	JUN	OCT	DEC	YEARLY TOTAL	COPIES / WEEK
Fairfax, VA	61,271	58,209	66,514	65,407	**628,859**	**12,093**
Washington, DC	42,800	24,388	28,822	21,013	**318,372**	**6,123**
Albany, NY	4,377	7,490	8,600	2,258	**95,195**	**1,831**
Los Angeles, CA	7,830	3,982	1,390	8,710	**47,301**	**910**
San Francisco, CA	31,352	9,046	10,797	6,810	**166,715**	**3,206**
Lexington, MA	8,485	4,193	14,170	3,204	**72,871**	**1,401**
Houston, TX	936	1,934	694	697	**13,271**	**255**

Operational Mode Approach

- Some feedback indicates equations are biased toward lower speed product models
  - Discussing alternative methods
  - Test data and market penetration information are needed from industry to evaluate higher speed bands
- Consider adding “On” mode to Operational Mode Approach
- Add power allowance for networking in all products

Recovery Time

- Need to carefully balance recovery times and power requirements
- Need to more clearly define recovery time
- Differing opinions on whether recovery time should be specified
  - Only in TEC
  - Only in Operational Mode Approach
  - Only for specific product categories (e.g., copiers, but *not* printers and scanners)
  - Not at all

Definitions

- Need for clear definitions
  - Operational Modes
    - Standby is unclear
  - No need for warm up and recovery from off
  - Others
    - Accessory
    - Marking technology
    - Products

Other Comments

- General support for formula vs. step approach
- Color vs. monochrome speed
- Test page
- DFEs
- Self-learning default time control
- Indirect energy savings
  - Paper saving
    - Combine imaging
    - Duplexing
- Remanufactured products

Feedback on Directional Draft – What Have We Learned?

- Feedback is varied and continued cooperation is imperative
- Decide if proceeding with TEC and dual-tracked approach
  - Industry wants a test procedure
- Additional research needed on usage patterns
- Importance of clear definitions
- Need for improved data sources

Next Steps

Action Item	Time Frame
Frequent industry updates	Ongoing
Continue to provide feedback on drafts	Ongoing
Begin draft test procedure	April
Contribute data from international markets	May
Complete review of comments & respond	May
Partner meeting in the US	Summer
First Draft Specification	Summer
Goal to complete spec revision	1st Qtr. 2005