

**ENERGY STAR® Monitor Industry Meeting**  
**Monday April 29, 2002**  
**San Francisco, CA**

**Overview of the Meeting**

ENERGY STAR wishes to thank all attendees. The feedback received is invaluable to our specification design process. Thank you.

The ENERGY STAR monitor industry meeting in San Francisco, CA was attended by 42 representatives from 24 different manufacturing companies and other interested organizations. (A complete list of the companies and organizations represented is available at the end of this document.) Industry feedback was provided to EPA regarding all aspects of the draft specification.

Of note, with few exceptions there seemed to be a consensus on having the new specification include requirements for all 3 operating modes (on, sleep, and off). One important area of discussion focused on whether EPA should set one specification for all monitors or allow part of the specification to contain different levels for CRTs and LCDs. At the conclusion of the meeting, several next steps were identified for both EPA and industry. These include refining the test method (collaboration between EPA and industry), testing current models once the test method is refined (industry), and issuing a second draft of the specification (EPA).

Detailed notes from the meeting, accompanied by specific next steps for both EPA and industry, follow. Anyone who wishes to submit written comments on the specification is encouraged to send them to Craig Hershberg, EPA, at [hershberg.craig@epa.gov](mailto:hershberg.craig@epa.gov).

**Key Themes from the Meeting**

- With few exceptions, there seemed to be consensus on having the new specification include requirements for all three operating modes: on, sleep, and off. The vast majority of attendees didn't express any concerns about a pixel per watt approach for the on mode. The Information Technology Industry Council (ITI), however, indicated that the inclusion of on mode might be a policy concern for some of its members who were not represented at the meeting.
- All attendees agreed that a duty cycle approach to the specifications isn't feasible for many reasons.
- Moving to a single sleep mode, as proposed in the draft specification, was broadly encouraged.
- Additional work is needed to refine the test method for measuring power consumption in the on mode. Once this test method is finalized, manufacturers will test their monitors and, based on this data, EPA will revise its specification as necessary.
- A major policy question emerged throughout the meeting: Should ENERGY STAR set one specification that covers all monitors (e.g., CRTs and LCDs), or should part of the specification contain different levels for CRTs and LCDs? The latter approach would likely result in a greater percentage of CRTs qualifying and a smaller percentage of LCDs qualifying.
- The monitor industry was pleased by EPA and FEMP's efforts to harmonize their requirements for off (standby) power usage.
- The list of consumer acceptance/non-energy parameters seems unnecessarily long to industry and refinement is needed.
- The 5-second recovery time for sleep mode may be a concern for industry. More clarity is needed regarding the test method for "recovery."

**Key Next Steps**

- Industry to submit input to EPA on consumer acceptance/non-energy parameters, suggested definition for recovery time, and other similar issues.
- EPA to follow up with industry on labeling options.
- Test Method Working Group, which was formed during the meeting, to convene and establish consensus on the test method for measuring on mode power consumption.

- Industry to test current models using refined test method, when available in a few weeks, and send test data to EPA.
- EPA to analyze data and revise specifications, as needed.

#### **On Mode Discussion**

- Several manufacturers asked EPA to consider two separate on mode specifications for CRTs and LCDs. Under the proposed specification, a greater number of LCDs would qualify than CRTs.
- Hewlett Packard expressed concern with the pixels/watt approach.
- Sony indicated that monitors used in a desktop publishing environment (e.g., 20 inches) would not be able to qualify under the proposed specification.
- A potential loophole for CRTs was briefly introduced. Manufacturers could upgrade the chassis to get a higher resolution and thus a higher ENERGY STAR power limit. To avoid this loophole, it was suggested that EPA could consider fixing or setting the resolutions, but this approach has downsides as well. Further, some manufacturers commented that the additional cost to upgrade the chassis would act as a deterrent and thus this wasn't really an issue.

#### **Sleep and Off Mode Discussion**

- Industry supports a single sleep mode specification, which differs from the current sleep and deep sleep design.
- The 4-watt sleep mode specification is an issue for some industry representatives because of the 5-second recovery time.
- All attendees agreed that more thought is needed on how to define and measure recovery time. Five seconds may be acceptable if recovery time is defined as the time for the computer to react to a signal. Indicating to the consumer that a product is responding is very important to manufacturers. Sony, for example, sometimes uses a flashing light to indicate to the user that the unit is coming on.
- One manufacturer asked if the off mode specification was intended to be the same for models with USB hubs. EPA said it was, but reiterated that no devices should be connected to the hub/port during testing.
- EPA explained that it is coordinating with FEMP to harmonize the off mode specification. FEMP supports a 2-watt specification and is expected to propose the same under the President's Executive Order.
- The off mode specification is a concern for LCDs with an external power supply.
- One manufacturer explained that when the input voltage changes, the power level changes. The implication was that monitors measured at 220 volts might consume more power than the same monitors measured at 110 volts; however, other manufacturers felt the reverse might occur. This may have implications for harmonizing specifications with the European Union.

#### **Consumer Acceptance/Non-Energy Parameters of Specification**

- Several manufacturers expressed concern about the inclusion of consumer acceptance/non-energy parameters in the ENERGY STAR specifications for monitors. While they appreciate EPA's desire to provide basic performance requirements to maintain the integrity of the label and a consistent level of quality across manufacturers, they do not think it is achievable with a few provisions. Below are specific comments on some of the provisions:
  - Brightness level will be harder to meet for larger CRTs.
  - EPA should reference ISO standards for contrast ratio; CRTs and LCDs are measured differently.
  - EPA may want to consider viewing angle as one of the provisions (e.g., 10:1 contrast is sustained). However, measurement repeatability and accuracy may be issues. (Note: For these reasons and others, EPA had considered viewing angle, but decided not to include it in the draft specification.)
  - Refresh rate is not needed for LCDs, only CRTs. Regarding refresh rate for CRTs, why encourage people to go to 85 Hz, which uses more power, if not necessary? Could 75 Hz be used for smaller monitors and 85 Hz for bigger monitors? Where should the line be drawn between the two?

- Pixel faults only applies to LCDs. While an equivalent attribute exists for CRTs (e.g., glass, phosphor, etc.), there aren't any industry standards.
- Some manufacturers don't think a warranty requirement belongs in the specification; others feel one year is more appropriate than two years. Manufacturers raised concern that warranties could be a serious challenge with retailers and may not work in international markets.
- EPA may want to review TCO's requirements to determine if they provide clarity or opportunities for harmonization.

#### **Test Method Discussion**

- Both EPA and industry agreed that a small committee is needed to draft the test method. A sign up sheet was circulated and completed during the meeting.
- Industry suggested that EPA review the November 2001 VESA specification, ISO 9241 (Parts 3, 8, and 11), and ISO 13406.
- One manufacturer suggested all white for the on-screen image as it works with both LCDs and CRTs.
- Industry asked that EPA specify exact voltages for testing and ensure that they are consistent with other ENERGY STAR testing guidelines.
- One manufacturer asked that the test method only require two test samples instead of five.

#### **Partnership Agreement Discussion**

- ITI asked several clarifying questions regarding the unit shipment data requirement. EPA agreed to work with Ken Salaets at ITI to set up a template and process for accepting data through ITI for its members.
- While product labeling will be a requirement for monitor manufacturers, EPA is open to finding mutually acceptable labeling options (perhaps five or six of them). During the meeting, one manufacturer suggested including the ENERGY STAR label in an on-screen display. EPA intends to discuss this and other options with industry following the meeting.
- Once the product labeling issue is resolved, EPA will prepare a clarification to accompany the Monitor Program Requirements. EPA has noted ITI's request that the labeling options be provided as an amendment and not a clarification.
- One manufacturer said it is hard to make a compelling case for labeling when energy-efficient electronics products are not being promoted at retailers. EPA responded by briefly describing a national consumer electronics promotion that is scheduled for this fall.
- Two ideas for providing standardized consumer information were shared with meeting attendees. One sample was created by NEC-Mitsubishi and the other by NRDC/Ecos Consulting. ENERGY STAR requires neither, but EPA is willing to facilitate the development and implementation of this type of information if requested by manufacturers. One manufacturer expressed concern about the printing issues it would generate. ITI said it is too early to include power use information due to the lack of consumer demand for it.

#### **User Interface Standardization**

- Manufacturers raised no objections to working towards user interface standardization through a voluntary standard for interface elements, to reduce end-user confusion. For more information on this, please visit: <http://eetd.LBL.gov/Controls>

#### **General/Other**

- Sony cautioned EPA that if CRTs fail to qualify as ENERGY STAR, the manufacturers might be tempted to remove circuitry that currently minimizes their standby power consumption. This would be a cost-saving strategy for manufacturers, but would increase product energy consumption.
- LCD manufacturing is an energy intensive process, but industry is working to address this. The following Web site has more information about an ongoing initiative between EPA and the monitor industry: <http://www.epa.gov/oppt/dfe/pubs/comp-dic/factsheet/index.html>

**Companies and Organizations Represented at the Meeting**

- AmTran
- Apple Computer, Inc
- Compaq Computer Corporation
- Dell Computer Corporation
- DisplaySearch
- Electronic Industries Alliance (EIA)
- Elonex
- Envision Peripherals, Inc.
- Gateway
- Genesis Microchip
- Hewlett-Packard Company
- Hitachi America, Ltd.
- IBM Corporation
- Information Technology Industry Council (ITI)
- NEC-Mitsubishi Display Company
- Philips Electronics Industries (Taiwan) Ltd.
- Pixelworks
- Samsung Electronics America, Inc.
- Sharp Electronics Corporation
- Sony Electronics
- Sun Microsystems, Inc.
- Underwriters Laboratories, Inc.
- U.S. Display Consortium
- ViewSonic Corporation