

ENERGY STAR® Computer Monitor Partner Meeting
Tuesday July 22, 2003
Washington, DC

Key Themes From The Meeting

- Several manufacturers stated that the computer monitor market is moving towards the Tier 1 specification on its own, where some CRTs will still be available but the majority of models will be LCDs.
- Manufacturers acknowledged that some CRTs are able to qualify under the proposed Tier 1 specification.
- Manufacturers raised concerns with the Tier 2 requirements and effective date – specifically, that Tier 2 goes into effect exactly one year after the effective date for Tier 1.
- Several manufacturers raised concerns that larger 16:9 computer monitor models may not be able to qualify under the proposed specification.
- With some minor adjustments, manufacturers felt that the ENERGY STAR computer monitor test methodology is sound and produces repeatable results.
- EPA confirmed that it had (1) reduced the number of units required to be tested under the test methodology and (2) reduced the number of voltage/frequency combinations for testing. Options for further reducing the number of measurements (e.g. European Norm 50301) were discussed during the meeting and are under consideration by EPA.
- In general, manufacturers appreciated EPA's willingness to amend the initial ENERGY STAR labeling requirements for computer monitors, and allow other labeling options. Some manufacturers indicated an interest in continuing labeling discussions with EPA, based on their specific marketing strategies and product lines.

Key Next Steps

- Industry to provide additional test data to EPA, specifically for larger 16:9 models, by Friday, September 12, 2003.
- Industry to provide final comments on the Draft 2 specification by Tuesday, August 12, 2003.
- EPA to review FCC EMC language to see how it pertains to European Norm 50301 for multiple measurements.
 - EPA to include some variation of European Norm 50301 in the test methodology, to reduce the amount of testing for some manufacturers.
- EPA to analyze additional test data and comments received by manufacturers, as well as feedback received during the meeting, and revise the Draft specification as necessary.
- EPA to draft new labeling language for the Computer Monitor Partnership Agreement.

Specification Overview Discussion

Comments on "Changes to Draft 2 from Draft 1" Section:

- EPA asked manufacturers to suggest ways in which the computer monitor definition could be clarified to ensure that TVs and computer monitors are appropriately differentiated.
 - Dell suggested that any product with a built-in tuner should be a TV, but several other manufacturers said that their computer monitors now include built-in tuners.
 - Dell then suggested having 3 separate ENERGY STAR criteria; one for computer monitors, one for TVs, and one for hybrid TV/computer monitor products.
 - NEC-Mitsubishi and Sony stated that their new wide-screen products are all hybrid products; they are computer monitors, but they have built-in tuners and are television-capable.
 - Sony further stated that large retailers often try to sell these products in their TV sections because there are larger profit margins.
 - Dell questioned whether monitors that draw their power from computers should qualify under the computer monitor specification. EPA responded that it considers these products to be "all-in-one" models, which are currently covered under the computer specification.

- NEC-Mitsubishi then suggested that the computer monitor definition should be clarified to state that qualifying products must be capable of being powered by a separate AC wall outlet or a battery unit that is sold with an AC adapter.
- NEC-Mitsubishi stated that if a product has VGA or DVI inputs then it should be considered a computer monitor, even if it has a built-in tuner.
- EPA suggested that there be a minimum screen size added to the computer monitor definition. Manufacturers provided various screen sizes as a bottom boundary, ranging from 12” to 15”.
- Dell raised the issue of whether or not manufacturers can use a “hard off” to reach one-watt in Off Mode for Tier 2. Several manufacturers agreed that this should be allowed. The justification was that FEMP allows use of a “hard off” to reach one-watt.
- Dell also asked if monitors with only one low power mode are able to qualify as ENERGY STAR.
 - EPA clarified that these monitors can qualify, but they have to meet the Off Mode specification and return to On Mode and full operational capability when the user resumes activity (e.g. user moves the mouse or presses a key on the keyboard). EPA acknowledged that a note addressing this issue would need to be added to the next Draft specification.

Comments on “Draft 2 Version 4.0 Energy-Efficiency Requirements” Section:

Tier 1

- Sony stated that in its opinion, Tier 1 of the specification is mirroring what is currently occurring in the marketplace and a November 1, 2004 effective date seems reasonable.
- The Information Technology Industry Council (ITI) requested a summary of the CRTs in EPA’s data-set that are able to qualify under the proposed Tier 1 specification. (Note: EPA forwarded the masked data to ITI on July 28, 2003.)
- IBM pointed out that the computer monitor specification is very different from other Office Equipment specifications because it includes On Mode requirements. Since this is the first Office Equipment specification to include On Mode, more time is needed to implement this specification, especially Tier 2.
 - Both IBM and Hewlett-Packard asked why active power was being measured in pixels/watt, and was this the best way to move forward, as product-performance was being reduced to one measurement criteria.
 - Hewlett-Packard also asked why active power was being measured at all for computer monitors, and did EPA consider other ways to measure it besides a pixels/watt approach.
 - EPA responded that other methods of measurement were considered (brightness, screen size, etc.) but pixels/watt was found to be the most technology-neutral and accurate approach to measure On Mode power consumption. Furthermore, On Mode power is being incorporated into the computer monitor specification because it will allow for significant energy savings – far more than only revising Sleep and Off Mode values – without sacrificing performance.
- TCO Development stated that they still want to harmonize their energy-efficiency requirements with ENERGY STAR. However, they look at all performance characteristics of the computer monitor, and they feel that screen size is a better measurement for On Mode power consumption.
 - Several manufacturers disagreed, saying that this would reduce everything to the efficiency of the light bulb in the computer monitor, which is not fair. They felt that pixels/watt was the most appropriate approach for measuring On Mode power consumption.
- Sony and NEC-Mitsubishi raised concerns about larger, wide-screen 16:9 resolution LCD monitors not being able to qualify under the proposed specification. Both manufacturers said that these multi-media, high-end products are slowly becoming more prevalent in the marketplace and manufacturers will be pushing sales of them, so they need to qualify under the specification.
 - The pixel counts and pixel-densities for these products are different from standard LCD monitors, so they need a different specification.
 - EPA requested that manufacturers submit data for these types of displays for careful evaluation. Sony and NEC-Mitsubishi agreed to submit additional test data.

Tier 2

- Sony stated that technologically, they are still unsure as to why certain LCDs are able to meet Tier 2 but others cannot. (Is it the backlights, the power supplies, or something else?) Sony feels it is relatively easy to pick up a watt or two in energy savings, but some products differ by more than 15 watts, and it is difficult to identify where these savings may come from.

- Dell agreed, and stated that without significant technological breakthroughs, which are unlikely in the specified timeframe, the majority of LCDs will not be able to qualify under the current Tier 2 specification.
- Dell suggested that another way to meet the current specification is to increase the pixel density of the LCD panels, though this is unfair and not consistent with the spirit of ENERGY STAR.
- Sony further stated that when Tier 2 comes into effect, the market will have moved towards larger LCD displays. These need brighter backlights and therefore use more power than their smaller counterparts. Currently, there is no way to incorporate the brighter backlights and still improve on energy-efficiency.
- IBM asked how many LCDs above 17" in screen-size are able to qualify under Tier 2. (Note: EPA forwarded the masked data to IBM on July 28, 2003.)
- Several manufacturers stated that LED displays are more efficient than LCDs and may start becoming more prevalent in the market by the time Tier 2 goes into effect. Currently, though, price is still a significant barrier to adoption of this technology.
- NEC-Mitsubishi indicated that Tier 2 is difficult to meet right now and there is significant concern that industry might give up on the program, if the levels are not adjusted.
- IBM asked if the monitor savings numbers provided in EPA's presentation were projected or potential savings.
 - EPA clarified that these were projected savings numbers.
- Hewlett-Packard asked for details regarding the usage pattern assumptions behind the projected monitor dollar and carbon savings numbers for 2010. (Note: EPA forwarded the usage pattern assumptions to Hewlett-Packard on August 15, 2003.)
 - Apple raised the point that by 2010, the market will have moved to mostly LCDs. EPA clarified that this assumption was already accounted for in the savings numbers.
- Hewlett-Packard asked how the Tier 2 specification is intended to serve as a roadmap, if EPA readily admits that they would be willing to revise the specification prior to its effective date, if the need arises.
 - EPA responded that Tier 2 will only change if something significant changes in the marketplace, which was not envisioned when Tier 2 levels were set. The set-top box specification was presented as an example where the technology and retail marketplace have not progressed as originally predicted.

Comments on "Timeline and Version 4.0 Effective Dates" Section:

- The Electronic Industries Alliance/Consumer Electronics Association (EIA/CEA) raised a concern about a review of the Tier 2 specification starting at the same time as Tier 1 goes into effect. EIA/CEA's rationale: There won't be enough additional data at the very beginning of Tier 1 to allow an adequate review of Tier 2.
- ITI stated that a Tier 1 effective date of November 1, 2004 is not accommodating for the removal of grandfathering because it still only allows a year between the specification being released and it going into effect – this is the same as for many other specifications, so no special concessions are being given.
- While IBM appreciates EPA's use of "date of manufacture" as opposed to shipping date, IBM still feels that it will be confusing to consumers to have a monitor in the marketplace that is ENERGY STAR qualified one day but no longer meets ENERGY STAR qualifications the next day, when Tier 2 comes into effect (i.e., splitting model runs).
 - To address this issue, IBM suggested putting versions on the label.
- Several manufacturers pointed out that a year between the effective dates for Tier 1 and Tier 2 is too short, and their production cycles will not be able to accommodate this timeframe.
- EPA asked manufacturers what a reasonable timeframe would be for Tier 2, if November 1, 2005 is not feasible.
 - Sony responded that many monitor manufacturers are dependent on LCD panel manufacturers, based abroad, and these discussions could take a long time.
- Sony stated that January 1 (of any given year) is the most convenient effective date for them, since it is easier to follow the calendar year.

Other Comments Received:

- NEC-Mitsubishi raised the issue of mercury in backlights for LCD monitors.
 - Several states already have legislation in place for the gradual phase-out of mercury.
 - Others have legislation in place that says manufacturers must notify local government if they plan to sell any products containing mercury.

- Sony expressed concern over the fact that companies are building more and more peripherals into their LCD monitors. The ENERGY STAR specification might impede technology, since manufacturers will be dissuaded from incorporating peripherals into the unit.
 - EPA stated that the test methodology allows manufacturers to turn “off” all in-built peripherals or alternately power them down to their lowest power consuming state prior to testing.
- EIA/CEA raised concerns that several states are mandating ENERGY STAR specifications for products, and incorporating this into state legislation. EIA/CEA requested that EPA inform state governments that ENERGY STAR is a voluntary program, and should not be made into mandatory government legislation.

Correction to Specification Overview Presentation

On Slide 24, *Big Picture: Potential Savings*, EPA presented projected carbon savings by 2010 as being approximately 37.6 billion pounds. This is incorrect. The actual projected carbon savings by 2010 are 37.6 million metric tonnes (Mtc), or 304 billion pounds.

Test Methodology Discussion

Comments on “Non-Energy Factors” Section:

- TCO stated that it prefers a luminance setting of 125 cd/m² for LCDs, rather than the current 175 cd/m².
 - EPA responded that setting LCDs at 125 cd/m² would unfairly advantage those models that only have brightness controls, or operate in digital mode, since adjusting the brightness to get 125 cd/m² may lower power consumption by reducing power to the backlights, allowing these models to qualify more easily.
 - Several manufacturers agreed, and said that for the ENERGY STAR specification, a luminance measurement of 175 cd/m² makes the most sense.
- TCO stated that it prefers a refresh rate of 85 Hz for CRTs, since this level is better for ergonomic purposes.

Comments on “DVI Inputs and Digital Monitors” Section:

- Genesis Microchip expressed concern that the test methodology states “...manufacturers shall ignore the DVI input check cycle when metering the model in Off/Standby Power,” but mentions nothing about checking for analog inputs.
 - EPA agreed to amend this statement to indicate that any type of video input check cycle should be ignored when metering the monitor in Off Mode.
 - EPA further agreed to clarify that the power consumption reading should be an average true power reading, and not an instantaneous reading.

Comments on “Multiple Measurements” Section:

- Apple stated that it would like EPA to use European Norm 50301 – 15% Threshold proposal for multiple measurements. This states that if a tested monitor measures below the 15% threshold in all three operating modes, then it only has to be tested once. However, if a monitor measures at or above the 15% threshold in any of the three operating modes, then two more units have to be tested and all the results reported along with the averages.
 - EPA raised the concern that though the average value might meet ENERGY STAR requirements, one or more of the actual test values may be above the requirements. Also, there is evidence that some monitors show significant variability among units tested.
 - Sony responded that variability is a manufacturer-specific concern, and Sony tests products regularly to ensure that there is not a significant variability in products coming off their assembly lines.
 - Sony further recommended that EPA reference FCC EMC language for multiple measurements, which states that all units tested have to be within a certain range or they will not be accepted. Sony further suggested that the word “average” be removed from Apple’s proposal, and the highest of the 3 measured and reported values be used by EPA.
 - Several manufacturers showed support for this amended version of Apple’s proposal, where a monitor measured at or above the 15% threshold in any of the 3 operating modes must have two additional units tested. In order to qualify for ENERGY STAR, all 3 sets of measurements must

- meet ENERGY STAR requirements and be reported to EPA. The highest of the 3 reported values for each operational mode will be used by EPA as the energy consumption levels for the monitor.
- Several manufacturers stated that testing monitors at 115 volts/60 Hz is preferable to testing at the voltage/frequency combination where the monitor will be sold, as the testing labs might not always know this information when they are testing the unit.
 - NEC-Mitsubishi also said that picking one voltage/frequency combination is preferable because it helps ensure that all monitors are tested under the same conditions.
- TCO stated that since its standard is European-based, it will require testing at 230 volts, and only require one unit to be tested.

Other Comments Received:

- Sharp suggested that EPA reference FEMP language for Off/Standby power measurements, as opposed to IEC 62301, since this standard is not yet finalized and may change. Sharp also stated that once IEC 62301 is finalized, the FEMP language will harmonize with it.

Labeling Overview Discussion

- EPA stated that its main objective in deciding which labeling options to permit for computer monitors was that the label must be visible to the end-user. Hence, labeling the back of the computer monitor or labeling the power cord were not viable options.
- Sony stated that EPA's "Label Used in Advertising" option would be too burdensome, and Sony's marketing department would not be able to pursue it.
 - EPA countered that this may not be the case based on which version of the label is used, etc. and that it would be willing to work with Sony initially to implement this option.
- Sony further stated that it would be easiest to just label its qualified computer monitors, rather than pursue some of the other options presented by EPA.
- NEC-Mitsubishi stated that it would not be possible to have an "Electronic Label" on the computer monitor that is only two clicks away, since Microsoft would need to include this capability – not the computer monitor manufacturer.
 - EPA indicated that "two clicks" was preferred, but it would work with individual manufacturers as appropriate.
- Lexmark stated that these labeling options should result in a change to the "boiler-plate" Partnership Agreement language. Lexmark stated a further concern about whether the US EPA's amended "boiler-plate" language would be recognized by other partner countries, such as the EU.
 - EPA stated that the language would be re-written for the computer monitor Partnership Agreement to reflect these changes.
- EPA stated that through its work with retailers, it has found that retailers rely on computer monitor manufacturers to inform them of which products are ENERGY STAR qualified, preferably through labeling of the physical computer monitor. This then allows retailers to correctly identify and promote the product as ENERGY STAR qualified, which they could not otherwise do.
- Sony stated that it would like ENERGY STAR labeling requirements to be consistent across all product categories, as this would make it easier for their marketing department.
- IBM raised concerns with the need to submit specific model numbers to EPA as part of its unit shipment data.
 - EPA clarified that specific model numbers do not need to be provided; only aggregate numbers of IBM's ENERGY STAR units shipped versus non-ENERGY STAR units shipped.
 - EIA/CEA explained to meeting attendees how it has reported unit shipment data to EPA, on behalf of TV/VCR manufacturer. EPA agreed to send to ITI the letter it prepared for EIA/CEA regarding unit shipment data requirements. If needed/requested, EPA agreed to provide a similar letter to ITI and computer monitor manufacturers.
- ITI stated that EPA's computer monitor labeling options are a step in the right direction, and it is now possible to start a dialogue with manufacturers on how best to label their qualified computer monitors.