HP Response to EPA Draft 3 Ver. 6.0 Display Program Requirements / Partnership Commitments:

Date Submitted to EPA: June 29, 2012   Submitted by: Mark Hollenbeck / Rick Krill

Reference Document Section / Line No.	HP Comment
Section 1.A Definition for "Enhanced Performance Displays (beginning on line 14 – 18)	We still have concerns about the draft 3 that requires all three features/functionalities to apply in order for a display to be eligible for the Enhanced Performance Display classification. As we have recommended in our past input, we recommend that only two of the three characteristics be required for in order for a display to be eligible for the Enhanced Performance Display adder. Additional input from HP Display Engineering: - CR>60:1 at a 85-degree horizontal viewing angle: it is my understanding that existing test equipment is not accurate at these wide viewing angles; Tim G. could give an opinion of a better wide viewing angle to test at, with a possibly higher CR minimum. - Resolution > 2.3MPix: This limits monitors to hi-res 30", 27" and 16*10 24" (1920*1200 resolution); with 16*10 gradually disappearing, the extra allowance will be limited to the 2 Performance monitors we have; Suggest that this be lowered to 2.05MPix (fullHD resolution), and a few other criteria be added. - sRGB color gamut…. No comment. - Enhanced Performance Displays should not just be about better panel specs: the "better panel specs" shown above do not necessarily contribute to higher power. We need a higher power allowance for displays with better features, like wireless, like Ethernet, like built-in processors, like powered USB ports. Maybe the allowance should be for "full featured monitors", rather than call it "enhanced performance". - For the new pixel density spec, the only monitor I see with higher than 14K pixel density is the 10.4" RPOS XGA panel (comes at 14.9Kpix/sqin)
Section 3.4 **Sleep Mode** Requirements and Tables 3 and 4 (beginning on line 337 – 371 And **Off Mode** Limit Section 3.5.1 (Lines 373 – 375)	Similar to the ENERGY STAR specifications for PCs, we assume that the "Enhanced Performance Display Power Allowance" is added to the base Maximum On Mode Power Requirement. We assume that a manufacturer can use all of the "Power Allowances" that apply depending on the specific configuration involved. We request that EPA confirm our assumptions and clarify this point in the final Ver. 6.0 Display specifications. Note: We have heard multiple people are asking questions about the adders for the Ver. 6.0 Displays spec. Similar to the comment we made regarding making the PC ENERGY STAR requirements clear, we need EPA to make the Display requirements clear so that everyone will interpret the specifications consistently. We recommend that EPA provide examples on how to determine the "Value of the Limits That Apply" (For at least the Display On Mode and Sleep Mode). And we also recommend providing an example of how the test results should be recorded and then compared with the spec. limits "Value of the Limits That Apply", to determine compliance. Similar to the example provided in the Ver. 5.2 PC spec. Appendix A Sample Calculations and as we requested for the Ver. 6.0 PC spec. Additional Input from HP Display Engineering: - The way I read it, we can add 0.5W to the "sleep mode" maximum, if a USB2.0 port (or 0.7W on a USB3.0 port) is connected to the PC for sleep mode test (as on a SideKick or Companion monitor, for example). - But we cannot take the extra power if the USB port is just available, and not in use (for example the standard USB prots we provide for possible connection to a kbd or mouse or disk-on-key… § *PDN is the power allowance, in watts, as specified in Table 3 for data or networking capability connected during Sleep Mode testing,* - For USB, we (HP) require the ports be awake to support waking-up a PC upon a kbd key-stroke or mouse movement, either in "Sleep" or in "OFF" modes… but these should consume minimal power as these operations are not exercised during testing. During testing the USB ports remain un-plugged.

	- If I am mistaken in the interpretation of the requirement, then we would need the same increase in allowance for the "**OFF" limit**. - Test spec, section 6.2.C.1.a says not to connect peripherals; section b is for data capabilities (graphics over USB, my guess)
Section 3.3 **On Mode Requirements** (beginning on line 196 to 214).	HP Recommends further revising the On Mode requirements as recommended by our OEM LGD (attached). LGD has offered two possible recommendations. One recommendation involving the On Mode categorization / limits. And another recommendation involving the Enhanced Performance Displays measuring greater than 30 inches.
Section 3.2.2 **Power Management** (beginning on line 176 – 183)	With respect to the new requirements for Displays to automatically enter "sleep" mode when disconnected from the Host PC (in addition to being capable of being power managed by the host PC): We believe the above requirement in the Draft 3 Display spec. is appropriate for displays with Scalers. However, we do not believe this is appropriate on displays with direct-drive or USB, displays without scalers. The power management functions reside on the scaler. Additional Input from HP Display Engineering: - With the requirement as specified in draft 3, we would lose ES certification on some of the high-end monitors (though scalers can be incorporated on next gen designs). And we would not be able to obtain ENERGY STAR qualification for displays and monitors with direct-drive or USB capability.
Section 5.1.1 **User Interface** (Lines 447 – 450) 5.1.1 Manufacturers are encouraged to design products in accordance with the user interface standard, 447 *IEEE P1621: Standard for User Interface Elements in Power Control of Electronic Devices* 448 *Employed in Office/Consumer Environments*. For details, see http://eetd.LBL.gov/Controls. In the 449 event that the manufacturer does not adopt *IEEE P1621*, the manufacturer shall provide EPA with 450 its rationale for not doing so.	Extract from Section 5.1.1: Manufacturers are encouraged to design products in accordance with the user interface standard, *IEEE P1621: Standard for User Interface Elements in Power Control of Electronic Devices Employed in Office/Consumer Environments*. For details, see http://eetd.LBL.gov/Controls. In the event that the manufacturer does not adopt *IEEE P1621*, the manufacturer shall provide EPA with its rationale for not doing so. Question: Has the IEEE P1621 standard been finalized? We are not familiar with the IEEE P1621 standard. We are reluctant to support or accept requirements being included in the ENERGY STAR specifications if the standard is not finalized. Questions / Input from HP Display Engineering: - Has anyone reviewed the IEEE P1621 standard, and do we have a set of rationale for not adopting it? - Checked the web a bit; seems to this still be in "draft" stage, since 2003 or so… - But for example, we do not follow the LED power button requirement: For power indicators use **Green** for **on**, **Amber** for **sleep**, and show no color when the device is off. **Red** should be reserved for warnings, alarms, or errors. Use **flashing** only for transitions or non-power meanings.
Ref. Section 6.1.1 Effective Date (beginning on line 453)	Effective date is shown as January 1, 2013. Due to delays in getting the Ver. 6.0 Display program requirements finalized, we request that EPA continue the convention of providing manufacturers with at least nine months lead time from the date the spec. is finalized. If the spec. is finalized and published in August 2012, this suggests that the Ver. 6.0 requirements should not become effective until May 2013. If July 2012, then April 2013 at earliest.

Partnership Agreements, Section 5.1.1	The "Electronic Labeling Option" seems to have been changed from past requirements. The requirement of minimum area size means different physical OSD sizes, so we cannot have the same pixel count for all monitors anymore and this is problematic from an implementation standpoint. HP had obtained EPA's approval on our electronic labeling plan for Displays several years ago. Can we assume that EPA's prior approval of our specific electronic labeling plan for Displays still applies in the future? We view the requirements involving 10% of the screen area etc. as general requirements for electronic labeling that do not require EPA review and approval. And separate from the provision that enables a manufacturer to present a specific electronic labeling plan to EPA for review and approval. Please confirm that our assumption about our currently approved Display labeling plan is correct and no changes will be required for the ver. 6.0 Display spec. Reference: − The ENERGY STAR mark in cyan, black, or white (as described in "The ENERGY STAR Identity Guidelines" available at www.energystar.gov/logouse) appears at system start-up. The electronic mark must display for a minimum of 5 seconds; − The ENERGY STAR mark must be at least 10% of the screen by area, may not be smaller than 76 pixels x 78 pixels. - EPA will consider alternative proposals regarding approach, duration, or size for electronic labeling on a case-by-case basis.