

February 27, 2006

## **JEITA's Comments on "ENERGY STAR Program Requirements for Computers Draft1"**

JEITA International Energy Star Committee

JEITA International Energy Star Committee has comments on "ENERGY STAR Program Requirements for Computers Draft1," as stated below.

### Partner Commitments

#### **ENERGY STAR mark labeling**

- PCs are often sold as built-to-order (BTO) or configure-to-order (CTO) systems, meaning that the same model exists in multiple different configurations.

For PCs sold in this way, the addition of idle state power consumption criteria in this version of the ENERGY STAR requirements could easily result in a situation where even the same model qualifies as ENERGY STAR in some configurations and does not qualify in others.

This would make production/manufacturing control of labeling exceedingly difficult, not only for product packaging/boxes but also for product literature (including electronic media), and therefore labeling should be optional, not required.

- Labeling on the product itself results in higher costs and should thus be voluntary.

Display of the ENERGY STAR mark should not be limited to the top/front side of a product. The mark should also be permitted on rating name plates, as allowing this would enable manufacturers to minimize increasing cost.

#### **Mutual certification**

- Discussions on ENERGY STAR requirements should be conducted under the following guidelines:
  - (1) A clear distinction between "Partner commitments" and "eligibility criteria" should be made, and the two should be discussed separately.
  - (2) Eligibility criteria and logo provisions should be internationally standardized.
  - (3) For operational regulations applicable to matters such as partner commitments and labeling, the regulations created in each country should be recognized within an agreement on mutual certification.

### Eligibility Criteria

#### 1) Definitions

##### D. Internal Power Supply

###### **Definition of internal power supply**

- An internal power supply should be defined as a unit that is separate from a PC board.

This definition is needed because it is extremely difficult to measure power consumption when an AC/DC power supply is provided as a circuit on a PC board.

##### E. Desktop Computer

###### **Delineation of categories for basic performance desktop and high performance desktop**

- For the reasons given below, CPU performance should not be the only indicator used to categorize desktop computers.

- (1) CPU clock speed and single-core/dual-core processor are used as guides to determine the

category to which a desktop computer belongs, yet the characteristics of CPU power consumption in the idle state are not clearly understood.

CPU power consumption in the idle state in particular is strongly associated with the manufacturing yield of CPU vendors. CPU vendors could sacrifice idle state power consumption in order to raise the manufacturing yield of their CPUs that run at the most popular clock speeds and that thus ship in the highest volumes.

- (2) The CPU is the only criteria used for category delineation, but the higher power demands of increasingly powerful graphics chips should not be ignored.
- (3) Meeting ENERGY STAR criteria for PCs will end up being largely dependent on the power-saving actions implemented by CPU vendors, and efforts by PC vendors to improve energy efficiency cannot be incorporated.
- (4) The same desktop PC model can be configured with different CPUs, so idle state power consumption levels can differ significantly. This could easily result in a situation where even the same model qualifies as ENERGY STAR in some configurations but not in others, making the management of ENERGY STAR applications and labeling extremely difficult.

#### H. Integrated Computer System

##### **Definition of integrated computer**

- Some systems have a separate computer and visual display but a single, combined power unit with single AC cord. Products of this type should also be defined as integrated computer systems. In other words, the sentence “A desktop system in which the computer and visual display are combined into a single unit” should be deleted from the text.

#### 2) Qualifying Products

##### **Multimedia Computers**

- The definition of “multimedia computers” with TV tuner and home server functions should be clarified.
- We request that one of the following actions be taken, because some multimedia computers continuously supply power to functional components like TV tuners for the sake of user convenience.

- (1) Allow energy consumption measurements to be performed with the functional components removed.
- (2) Classify them in a separate product type category from desktop computers, and establish separate criteria.
- (3) Exclude them from ENERGY STAR eligibility.

##### **Clamshell Computers**

- The definition of clamshell computers and handhelds, neither of which is covered by Ver. 4 of the specification, should be clarified. (The distinction between notebook computers is not clear.)

#### 3) Energy Efficiency and Power Management Criteria

##### A) Tier 1 Requirements

##### (1) Energy Efficiency Requirements

##### Product Type = Desktop/Multimedia Computers

##### **Idle state power consumption requirement**

- There is demand from the market to add functions described in the performance and reliability defined for workstations to the same model of CTO/BTO desktop PC. The addition of such functionality could

easily result in instances where the system fails to satisfy the idle state power consumption requirement. This would make it extremely difficult to deliver PCs positioned between the aforesaid desktop computers and workstations to government agencies and schools that make ENERGY STAR qualification a condition of purchase.

In other words, the current draft is structured so that the criteria impact the high performance and high functionality that users demand. We believe that it is necessary, for example, to consider determining requirements for idle state power consumption on the basis of a PC's power supply rating.

#### **Off Mode Requirement**

- Achieving the Off Mode  $\leq 2$  W requirement by the January 1, 2007 effective date may not be possible, as development work to meet the requirement would involve major design changes and an increase in costs.

#### **Internal power supply requirement**

- For the reasons given below, it would be extremely difficult to comply with the power factor requirement by the January 1, 2007 effective date.
  - (1) Since meeting the requirement will require design changes to existing internal power supplies, the time it takes to implement design changes and qualify safety standards should be taken more fully into account.
  - (2) Fuller examination is needed, since meeting the requirement will entail an increase in costs. It is proposed to follow an international standard of power line harmonics instead of adding the new requirement concerning power factor to the Energy Star criteria.
- Presently, the efficiency at 20% of rated output of nearly all commonly used internal power supplies is less than 80%. Improvements here will entail higher costs and require more development time than is afforded by the January 1, 2007 effective date. Therefore, the average efficiency at loads of 20%, 50% and 100% of rated output should be used to determine efficiency.

#### Product Type = Notebook Computers/Tablet PCs

##### **Idle state power consumption requirement**

- For the reasons given below, EPA should fully consider the categories of Intel Celeron M CPU models and the percentage of Celeron M models in the market in statistical analyses of market data.
  - (1) There is a huge difference between an Intel Pentium M and a Celeron M in terms of idle state power consumption in a notebook PC.
  - (2) It would be extremely difficult for notebook PCs running a Celeron M to meet the idle state  $\leq 21$  W requirement, and there is nothing PC vendors should make an effort to meet the requirement.
  - (3) There is a high possibility that the large majority of Celeron M models purchased by cost-conscious governmental and educational institutions will not qualify as ENERGY STAR.
- The following factors associated with LCD panels largely influence idle state power consumption and may make it extremely difficult to meet the requirement:
  - (1) Panel size
  - (2) Resolution
  - (3) High-brightness, etc.

Therefore, when an LCD is integrated as in a notebook PC and there is a large number of types, idle state power consumption should be measured with the LCD panel and backlight off.

- When a high-performance graphics chip is used, meeting the requirement in the idle state would, in many cases, be extremely difficult.
- As in the case of desktop computers, the current draft is structured so that the requirements impact the high performance and high functionality that users demand. Hence, it is necessary, for example, to

consider determining requirements for idle state power consumption on the basis of a PC's power supply rating.

### **Sleep Mode Requirement**

- The sleep mode  $\leq 5$  W requirement is exceptionally lenient and is out of balance with the difficult requirements cited for off mode and the idle state. The basis for the sleep mode requirement is obscure.

### (2) Power Management Requirements

#### **User Education Requirement**

- The user education requirement should be listed under "Partner Commitments," not "Eligibility Requirements."
- User education requirements should follow the regulations created in each country and should be treated within the confines of mutual recognition.

#### **Shipment Requirement**

- For the reasons given below, the shipping requirement should not include enabling WOL.
  - (1) If a system is shipped with WOL enabled, users could unintentionally start up the power supply.
  - (2) Less power is consumed in off mode when WOL is disabled. Therefore, for the large majority of users, greater power savings can be expected if WOL is disabled.
  - (3) The way things are being done now is sufficient since systems are shipped with WOL enabled only for certain users who use WOL, or WOL is enabled by corporate IS administrators upon system delivery.
  - (4) Notebook PCs are powered by a battery when their AC adapter is removed. Since WOL uses considerable power, enabling WOL at the factory prior to system shipment would cause batteries to go from fully charged to empty within a short period of time.
- Although it would be possible to include enabled WOL in measurement conditions for sleep mode and off mode, we oppose to prescribing that WOL be enabled as a condition of factory shipment.

## **APPENDIX B: Draft Test Procedure for Determining Idle State Power Use of Personal Computers**

### Definitions

#### Approved Meter

##### **Definition of Approved Meter**

- We request that the definition of "approved meter" be amended to make it clear that an approved meter is any meter that satisfies the requirements listed in the text, and is not a meter that has been approved for conformance to IEC 62301.

#### Idle State

##### **Definition of idle state**

- We request that the definition be amended to explicitly state that, in the case of a notebook computer, a mouse need not be connected if a pointing device such as a touch pad or pointing stick is already built in.
- Not all tablet PCs have a keyboard. We request that the definition be amended to explicitly state that a keyboard need not be connected in such a case. We also request an amendment to explicitly state that a mouse need not be connected if a digitizer is built in.

#### Measurement Approach

**Initial preparations, depending on computer type**

- In the initial preparations listed for laptop PCs, the descriptions of actions 5 and 6 are unclear.

The main text can be construed to mean “Measure power use with the screen set to full brightness and with the screen off,” and the definition of idle state is not specified uniquely.

We request that the series of steps in the procedure, including initial preparations and power use measurements, be shown in a flow chart.

**AC line voltage source**

- Line 737 in Appendix B reads “...connect...to an ac line voltage source set at 120 volts and 60 Hz.” Wording should be added to take into account for the different ac line voltage sources used in other countries.

**Measurement start conditions**

- In line 742, Appendix B indicates that “Exactly 5 minutes after the computer was switched on, set meter to begin accumulating true power values....” This should be amended to “With the system in a stable state, measure average values for 5 minutes.” The amendment is needed to account for the possibility that the operating system has been set up to execute some kind of process (virus scan, HDD optimization for high-speed start-up, etc.) during the measurement period defined by the NRDC.