



February 20, 2019

To: Mr. Ryan Fogle and Mr. John Clinger, EPA ENERGY STAR® Program via computers@energystar.gov

From: Erica Logan, Information Technology Industry Council (ITI)

Re: U.S. EPA ENERGY STAR for Computers v8 Discussion Guide

ITI represents numerous high-tech and electronics manufacturers in the information and communications technology (ICT) sector. Our members are global leaders in all facets of ICT innovation, from hardware, to services and software, and have long been leaders in sustainability. Many exceed environmental design and energy efficiency requirements and lead the way in product stewardship efforts. As a result, the Dow Jones Sustainability Index, the Financial Times Sustainability Index, and the Global 100 have consistently recognized several ITI member companies for their significant environmental and sustainability achievements.

ITI appreciates the opportunity to provide comments for the EPA's ENERGY STAR for Computers v8 Discussion Guide.

1. Categorization system used to set leadership levels

- a. Are there other considerations that EPA should evaluate before deciding on use of an updated p- score desktop categorization approach in Version 8.0?

Industry has conducted extensive analysis of EPA's dataset to compare the categorization approach between p-score and expandability score based on CEC's categorization approach. In the analysis industry pointed out that while the expandability approach is more complex, it is a slightly better indicator of system capability especially for lower and higher capability systems. Since EPA prefers a less complicated p-score approach for the ENERGY STAR program, Industry will work with EPA on a new desktop/integrated desktop categorization approach based on p-score and evaluate its impact across all desktop and integrated desktop segments.

- b. Are there additional data points that stakeholders would like to share on non-certified products to support this decision making regarding categorization?

Regarding the **allowances** (adders) industry requests EPA to review new adders (example: non-traditional SSDs/caching solution treatment, high BW memory, 5G modem, LAN (>2.5 GB); switchable graphics for DT, and other relevant CEC

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adder approaches (e.g. dGPU), displays (may compare to CEC, Japan Top Runner Program).

Industry is also reviewing the current benchmark approach used for workstation maximum power testing to understand if the existing benchmarks need to be replaced with something that better represents the current class of workstation products in the market. Industry plans to get back to EPA before the first draft proposal.

Industry is also working on data analysis for allowances (adders), and to meet deadlines, would like to work with the EPA to develop a schedule for issuance of Draft 1.

2. Duty cycle and mode weightings, including incentives for features promoting more functional power management

- a. Do additional stakeholders have large scale mode weighting data to help inform potential modified mode weightings for use in Version 8.0? If so, when can they be shared?

Industry is in the process of collecting extensive mode weightings data for desktop and notebook computers and plans to share this data with EPA in advance of publication of the first draft proposal.

- b. The existing mode weightings are based solely on enterprise systems, as this was the information available at the time, while the proposed weightings include residential usage as well. Is this an appropriate focus for ENERGY STAR, or should enterprise systems continue to be the focus?

Industry is in the process of collecting extensive mode weightings data for desktop and notebook computers, focusing on both enterprise and consumer usages. With the growth of consumer usages, industry thinks it is appropriate to consider inclusion of both type of usages in one new averaged (mean) mode weighting.

- c. During the development of Version 7.0, EPA received information that manufacturers were targeting connected Modern Standby as the key feature to reach the CEC standard levels for 2021. Is this no longer the case or what other options are being considered to reach these levels?

While Connected Modern Standby feature is one of the approaches, there are other HW solutions that the manufacturers may employ based on their cost effectiveness strategy.

- d. Data shared with EPA appears to indicate that power management is not turned off in the vast majority of systems, which is also supported with the mode weighting data shared above. Is there additional data that stakeholders have which would support or refute this conclusion?

- i. Additionally, the original data that EPA received, which indicated that power management was being turned off, focused on enterprise systems, while the current dataset is a mix of both. Is there any nuance that EPA should be aware of related to enterprise computers that would lead to a different conclusion in the adoption of power management?

In general, Industry is not aware of power management being disabled. Industry continues to ship computers with power management enabled by default. Use of power management is now pervasive as reliability and user familiarity has increased for systems with legacy S3 power management as well as systems with modern standby or other always connected usages.

- e. Given the mode weighting data and the potential dramatic increase in power management adoption, is there a reason for EPA to consider continuing to incentivize features such as ECMA-393 full capability, connected Modern Standby, and other solutions with comparable functions? Or does a need remain to incentivize these features due to the increased functionality to ensure that there is no risk to power management being turned off in the future?

While there may be a need for full capability incentives, industry is evaluating the relevance of ECMA-393 based full network connectivity definitions. Industry proposes to get back to EPA on any alternative approaches. It's complicated and one of the goals will be to make it simpler for manufacturers and the CBs.

3. Internal Power Supplies

- a. Do stakeholders agree with the assessment, based on 80Plus data, that the efficiency of the power supplies at 5% load is at an adequate level to not require specific criteria?
- b. Is there any additional data that EPA should consider when determining if power supply efficiency has improved to the point that greater savings are possible for those products under 500W?
- c. Is there any further data or comment on increasing the internal power supply requirements for products operating at less than 500W to 80Plus gold or equivalent to match the requirements at greater than 500W?

Industry supports the v7.1 criteria. IPS efficiency is one of the tools manufacturers use to achieve TEC goals. It should be noted that going beyond current requirements for IPSs may not be a cost-effective way to meet TEC goals. Alternative approaches may be more appropriate.

4. Resume time from sleep
 - a. Are there any additional data points that stakeholders would like to share to help inform EPA's assessment of resume time?

Industry is continuing to collect more data. Our initial recommendation is to remove resume time latency target as part of sleep definition, due to wide variability of resume times across PC segments. Current <5 sec resume time is not workable. There is no evidence that the users are disabling power management and hence no need for resume time latency targets. Should the EPA insist on resume time targets, industry will work with EPA and other stakeholders on resume time approaches by key PC form factors.

5. Product Scope
 - a. Are there any other products that manufacturers will be releasing that EPA should consider for inclusion under the Version 8.0 specification?
 - b. Does the definition for multi-screen notebooks capture the various iterations of these products that are expected to be released over the life of the Version 8.0 specification?

- Industry has a slight update to the definition of EPA's proposed definition for **Multi-Screen Notebooks** and recommends it be a subset under "Notebook Computer":
 - o A computer that resembles a traditional Notebook computer with a clam shell form factor but has a secondary display with touch/pen capability; that can be used as a touch screen keyboard in place of a traditional mechanical keyboard. Multi-Screen Notebooks are considered Notebooks in the remainder of this specification and are therefore not referenced explicitly.
- Industry supports EPA's proposal to exclude mobile phones that can convert to a tablet. Industry will work with EPA on definitions to be able to differentiate these products.

6. Treatment of non-traditional SSD options
 - a. Are there any other forms of non-traditional based storage device that EPA should consider in Version 8.0? If so, is there data available to address them if appropriate?

Yes and industry plans to provide definitions and initial power allowance data for non-traditional based storage and caching solutions during the draft specification development. An appropriate adder for caching solutions would be a 0.5 kWh TEC adder for SSD drives, based on current mode weightings.

6. Treatment of non-traditional SSD options
 - b. Are there other M.2 devices that provide functionality different than a storage device that EPA should account for in Version 8.0? If so, what are they and is there data available to address them if appropriate?

Industry recommends starting with applicable CEC adders, but welcomes further dialogue to clarify EPA's questions.

Additional Discussion Topics

Test Procedure

- DOE had agreed to the test procedures and certification for computers to allow longer test time for products that exhibit cyclical behavior. Industry desires to work with DOE and EPA to agree on finalizing the test procedures and grandfathering of such products that are already in the market today.
- Industry would also like to work with EPA to define a new test image for integrated displays.
- Lastly, industry seeks clarification that the spinning of hard disk drives during short idle testing applies only to the primary drive. The primary drive is the drive upon which the OS resides.

Displays

- Due to the dynamic and evolving display market, additional features, such as HDR and curved displays, that affect TEC will need to be accounted for, especially if the system TEC limits are lowered significantly.
- EPA, in version 7.1, has already aligned adders for notebook computer displays with CEC; industry recommends a similar approach for integrated desktops, and thin client desktop computers.

We would be pleased to discuss any aspect in greater detail and appreciate on-going collaboration with EPA and other stakeholders.

Sincerely,



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