ITI Promoting Innovation Worldwide

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ENERGY STAR Program
U.S. Environmental Protection Agency
Via email: computers@enegystar.gov

Subject: ENERGY STAR® Program Requirements Product Specification for Computers Eligibility Criteria Draft 1, Version 9.0

On behalf of the Information and Communication Technology (ICT) industry, the Information Technology Industry Council (ITI) is providing comments on the Draft 1, Version 9.0 ENERGY STAR Computer Specification issued on 11/10/2023.

ITI is the premier global advocate for technology, representing the world's most innovative companies. Founded in 1916, ITI is an international trade association with a team of professionals on four continents. We promote public policies and industry standards that advance competition and innovation worldwide. Our diverse membership and expert staff provide policymakers with the broadest perspective and thought leadership from technology, hardware, software, services, and related industries.

General.

During the 11/30/2023 public webinar, ITI member companies raised significant concerns about the Version 9.0 data package accompanying Draft 1. As agreed during the webinar, ITI, and EPA/ICF have since engaged in a cooperative project to enlarge and improve the data set, ensuring that it better represents today's computer marketplace. That effort resulted in the data set being transmitted to EPA/ICF on 1/31/2024. The comments that follow consider that new data set and its implications.

Comments on specific sections.

Section 1(A)(3)(c). Lines 40-54. Mobile Workstation Definition. ITI supports the revised definition in Draft 1 of the specification that allows for increased differentiation between notebook computers and mobile workstations; harmonizes with the CEC and the EU; and tracks well with the revisions made to the desktop workstation definition.

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Section 1(A)(4). Lines 62-69. Slate/Tablet Definition. ITI supports the revised minimum screen size of 7.0" vs. the previous 6.5" referenced in ENERGY STAR Version 8.0 and agrees with not adopting the EU language on mobile OS.

Section 1(A)(9). Lines 123-132. Workstation Definition. ITI supports the revised definition in Draft 1 of the specification: ensures the definition closely aligns with specific workflow types that these products are designed for and removes some sub-requirements that are no longer relevant.

Section 1(C). Lines 145-154. Computer Components Definitions. ITI suggests that the defined word Core (or Cores) on lines 149, 157, and 514 be capitalized.

Section 1(D)(4). Lines 221-226. Sleep Mode Definition. ITI proposes the following edit:

> Sleep Mode: A low-power mode that the computer enters automatically after a period of inactivity or by manual selection. A computer with Sleep capability can quickly "wake" in response to network connections or user interface devices from initiation of wake event to a readable display. For systems where ACPI standards are applicable, Sleep Mode most commonly correlates to ACPI System Level S3 (suspend to RAM) state or, for workstations without resume-time limits, ACPI System Level S4 (hibernate). P_{SLEEP} represents the average power measured when in ~~the~~ Sleep Mode.

Section 3(2)(2). Lines 341-353. IPS Requirements. ITI believes ≤500W output should remain at the version 8.0 limits (80 PLUS Bronze). This provides opportunities for manufacturers to offer higher efficiency models to compete in the open marketplace while still meeting the ENERGY STAR TEC limits.

Section 3(5)(1). Lines 421-426. Resume Time Requirement. ITI proposes the following sentence, currently appearing in a footnote, be moved to the end of the definition itself -

> Resume Time Requirement: Notebook computers are required to wake from sleep or an alternative low-power mode with a latency of less than or equal to 5 seconds from initiation of the wake event to the system becoming fully usable including rendering of the display. Desktop and Integrated Desktop Computers shall meet this same requirement but with a latency of less than or equal to 10 seconds. Manufacturers shall self-declare that the product can meet this requirement. Resume time requirements do not apply to mobile workstations, workstations, or thin clients.

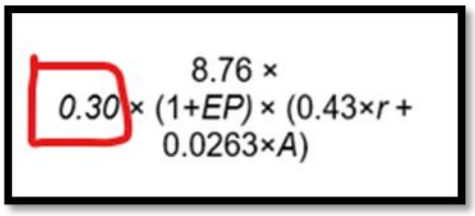
ITI has provided an updated database to the EPA during the Draft 1 comment period. The following BASE TEC and adders are based on this updated database.

Section 3(5)(2). Line 505. Table 6. TEC_{BASE} (kWh). Based on the new database and the below TEC Adders, ITI is recommending a TEC_{BASE} for each form factor to be:

- Notebook = 7
- Integrated Desktop = 8
- Desktops = 38

Section 3(5). Line 523. Table 7. TEC Adders (kWh). ITI is recommending the following changes to the TEC Adders:

- TEC_{MEMORY} adder is recommended to change, based on newer memory power data. The formula is simplified to have just a multiplier for the amount of memory and does not include a constant value in the formula.
    - Notebook: 0.08 * GB
    - Desktop & Integrated Desktops: 0.17 * GB
- $TEC_{SWITCHABLE}$ Graphics adder that only applies to Desktops and Integrated Desktops is recommended to change from 14.4 to 7. This is based on the reduction of power over time for the Mux power used by Desktop computers to control the output of both the integrated graphics and discrete graphics in the same system.
- $TEC_{INTEGRATED\_DISPLAY}$ adder for Notebooks is recommended to change based on the change in mode weightings for Notebooks. Computers Ver 8 had a Short Idle Mode Weighting of 30%, and Computers Ver 9 changed the Short Idle mode Weighting to 20%. Below is a picture of the integrated display adder, and the value in that formula needs to change.



The proposed TEC adder for Notebook's Integrated Display
= **8.76 x 0.20 x (1 + EP) x (0.43xR + 0.0263xA)**

Section 3(5). Line 539. Equation 3: Calculation for Enhanced Performance Integrated Displays. ITI recommends simplifying the Enhanced Performance Integrated Display multiplier to be 0.3. The Integrated Display adder already has Area and screen resolution as part of the calculation, so that the Enhanced Performance Integrated Display multiplier can be 0.3 for all screen sizes.

Section 3(7). Lines 551-555. Requirements for Workstations. ITI recommends that ENERGY STAR collaborate with the Standard Performance Evaluation Corporation (SPEC) on creating an active energy efficiency benchmark for workstations to replace the current workstation test method in a future revision of ENERGY STAR for Computers.

Section 4(1). Line 622. Table 12: Test Methods for ENERGY STAR Certification. The Table 12 test method reference is out of date. It should be "ENERGY STAR Final Test Method for Computers, Rev. May 2022."

Section 5. Line 682. Insert a new Section 5: "Test Procedures for Workstations". Barring DOE's plans to update this section, ITI proposes to copy the entire Section 7 from the Version 8.0 ENERGY STAR for Computers specification and paste the "Test Procedures for Workstations" to become a new Section 5 following Section 4 of this v9.0 specification; thus, incrementing the numbers of subsequent v9.0 Sections.

In our submission during the discussion guide, ITI proposed creating an alternate test method for manufacturers of workstations that are incompatible with either LinPack or SPECviewperf (e.g. MacOS products and architectures with SoCs with neural processor units (NPUs)). While we understand that EPA would prefer to have exact workloads spelled out for this test, ITI does not propose any particular workloads at this time because workloads can quickly become stale. Instead, ITI would ask the EPA to draft broad language that would allow a workload of the manufacturer's choice to be selected if it can be demonstrated that the workload draws *more* power when it replaces either LinPack or SPECviewperf if those workloads do not function as intended (i.e. stress the CPU and GPU respectively). For example, on MacOS, where LinPack can function but SPECviewperf does not stress the GPU cores, a manufacturer would continue to run LinPack *as well* as *any* workload that stresses the GPU as long as, on the whole, more power is drawn than the default testing condition. The higher reported Max Power Value would be used if that can be demonstrated. We note that the point of the workstation test with SPECviewperf and LinPack is to draw as much power as possible to set TEC targets. Thus, both a manufacturer's interest and the specification are aligned and incentivize the selection of a high-power-consuming workload instead of an underpowered one. Examples of workloads that could achieve this result would include 3D Mark Wildlife Extreme or Cinebench 2024.

Section 6(1)(1). Lines 691-2. Effective date goal. ITI believes a Draft 3 is necessary, considering a revised data package and updated TEC base and adder thresholds, before the final draft. We anticipate that this shall result in a final Version 9 specification no sooner than Q4 of 2024. We would further anticipate that EPA would allow a customary 12 months (transition) to establish the effective date.

EU common charger compliance. As the EPA is aware, the European Union has adopted revisions to the Radio Equipment Directive, which mandates a "Common Charger." In addition to this change, the EU requires manufacturers to offer consumers the option of not purchasing a 'bundled' power supply when

consumers purchase notebooks or laptops. Because of this, manufacturers are presently engaging in the process of redesigning packaging and SKU offerings as appropriate to enable compliance. For tablets, the compliance deadline is December 28th, 2024. For laptops, compliance is required by Spring of 2026, but manufacturers are nonetheless encouraged to comply with the requirements as soon as possible.

To facilitate compliance and streamline operations, manufacturers are considering aligning EU and American SKUs as the need for an inbox adapter for region-specific power receptacles has been removed. At the same time, manufacturers are preparing for the eventuality that jurisdictions within North America (i.e. California, Connecticut, or Quebec) mimic the EU and mandate an unbundled solution. However, per the test procedure for ENERGY STAR from version 8.0, only tablets and notebooks that are designed to be recharged by a power supply no greater than 35W may be tested with a recommended adapter. ITI understands that the test procedure requires an in-box adapter to conduct the testing for all other products.

Considering this, ITI requests that the EPA removes this barrier to compliance and allows computer manufacturers to be ENERGY STAR certified with a recommended adapter. ITI requests that the EPA makes a conforming change for computers in 2024 by changing the test method referenced in Version 8. Then, ITI requests that ENERGY STAR make conforming changes for Version 9 of ENERGY STAR to allow notebooks to comply. ITI welcomes an engagement with the EPA on this unique topic to address any concerns.

Thank you for this opportunity to provide comments. Please contact me if the EPA wishes to meet with members to discuss our recommendations in further detail.

Best regards,

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