February 28, 2019

To: Ryan Fogle and John Clinger, U.S. EPA ENERGY STAR®
From: Erica Logan, ITI

Re: Additional ITI analysis for ENERGY STAR for Computers v8 specification development

Thank you for the opportunity to provide further analysis. Our preliminary recommendations follow, but we wish to emphasize that analysis is continuing and we expect to be able to further refine our proposals during subsequent steps in the specification development cycle.

Mode Weightings

Preliminary recommendations for mode weightings based on computers in use in 2019 are as follows:

Chassis type	# Systems	Short Idle	Long Idle	Sleep	Off
Notebook+2in1	1,151,469	20%	10%	60%	10%
Desktop	583, 753	30%	10%	45%	15%
Work Stations	8,139	35%	20%	35%	10%

As you are aware, any changes to mode weightings for notebooks (NBs) or desktops (DTs) will affect all limits/adders. As an example, for DTs total idle (on) mode for ENERGY STAR v7 is 50%, while the total idle (on) mode proposed for ENERGY STAR v8 is 40%.

Adders

Preliminary recommendations for Desktop/Integrated DT, Thin Clients Proposal (kWh) adders are as follows:

Function	ENERGY STAR (ES) v7.1	ITI Proposal – ES v8
System Memory	0.8 per GB installed in the system NB – 2.4 + (0.294 * GB)	2.4 + (0.294 * GB) same as ES v7 - NB
Energy Efficient Ethernet	8.76 × 0.2 × (0.15 + 0.35)	Same
Storage	26 Applies once if system has more than one Additional Internal Storage element.	3.5-inch Drive: 26 2.5-inch Drive: 4.5 Solid-State Drive (SSD): 0.5 Solid-State Hybrid Drive (SSHD): 1.0 Other (PCIe AIC or U.2 interface): 26 per storage device (Note: This is one way to define “other” but we seek further dialogue with EPA)

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Other non-traditional SSD options (NVMe, Caching solutions)	NEW	Treated as SSD: 0.5 kWh
PSU Capacity (Desktops only)	None	None
dGPU	G1=36; G2=51 G3=64; G4=83 G5=105; G6=115 G7=130 G1~(FB_BW ≤ 16) G2~(16< FB_BW ≤ 32) G3~(32 < FB_BW ≤ 64) G4~(64 < FB_BW ≤ 96) G5~(96 < FB_BW ≤ 128) G6~(FB_BW > 128; Frame Buffer Data Width < 192 bits) G7~(FB_BW > 128; Frame Buffer Data Width ≥ 192 bits	58.6*tanh(0.0038*B-0.137)+26.8
Switchable Graphics*	0.5 X G1	18
Additional dGPU	None	Test with one card
Integrated Display (applies to AIOs)	8.76 × 0.35 × (1+EP)×(4×r+0.05×A)	Industry is still reviewing this item.
Add-in Cards	None	No Adder - Test without
Video Surveillance Card	None	No Adder - Test without
Wired Ethernet or Fiber Card with a transmit rate of 10 Gb/s or greater	None	No Adder - Test without or on motherboard solution=25
2.5G LAN	New	1.5 kWh
High bandwidth system memory, where "S" is system memory bandwidth measured in GB/s	None	Industry is still reviewing this item.

* Applies to automated switching that is enabled by default in Desktops and Integrated Desktops.

We look forward to further dialogue.

Sincerely,

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