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SUBJECT: Comments on draft 2 of ENERGY STAR 5.0 Computer Specification

ITI's Energy Star Working Group has reviewed and discussed the latest proposed revision of the new 5.0 specification, and offers the following comment and recommendations. Please note that we do not have specific comments or alternative recommendations on "Small Scale Servers" at this time. We are also not providing comments on the Thin Client Direction Draft, because our position is still under development. We do wish to note, however, that ITI members have a number of concerns with the thin client category regarding both definitions and limits which we believe do not reflect the current market for thin client products.

NOTEBOOKS

- Mis-categorizations
 - Record #: 169, 171 were reclassified as Category B
 - Graphics bus width not marked, but is 128bits from graphics mfg data
 - Duplication of data
 - Many systems were submitted twice
 - Measured at 220V, then at 110V
 - Should remove
 - Discrete Graphics cards
 - UMA marked as discrete (typically no issue here as frame buffer width was not recorded, so stayed Cat A)
 - Discrete cards with no frame buffer width recorded
 - Showed two transfers from Cat A to Cat B
- Cat A (30 KWhr limit)
 - We isolated netbooks by CPU model number (Intel Atom and Via C7)
 - Record #: 257, 275, 271, 266, 398, 401, 402, 397, 403, 399, 412
 - 72% pass Cat A (8), 28% fail Cat A (2)

- Next five systems to pass have no Ethernet (100%)
 - Record #: 319, 317, 320, 318, 80
 - All pass category A
 - Believe 319/320 and 317/318 are the same system, but tested at 120V US (319/317) and 240V EU (320/318)
- The other 33 (18%) passing systems which pass have 4Gbytes of memory
 - Can't pass without the memory adder
 - 137 Category A systems do no pass
- Category A Passing Criteria
 - Netbooks pass easily (72%)
 - No Ethernet pass easily (100%)
 - Mainstream notebooks with Ethernet can only pass if 4Gbytes of memory!
- Cat B
 - 2 (4%) systems pass with less than 4 Gbytes of memory
 - Record #: 191, 192
 - All other category B passing systems require 4 Gbytes of memory to pass
 - 11 (20%) systems, Record #: 193-203
 - 42 (76%) systems fail

DESKTOPS

- Industry observing multiple data inconsistencies in the EPA data set:
 1. incorrect Core counts by processor number
 2. incomplete Gfx information (both iGFX and dGFX)
 3. possible duplicate system entries for 230V/115V
- Impact of these items is inaccurate data correlation for TEC targets v. system attributes

Issues with EPA draft2 Categorization Proposal

- ITI categorization proposal objective was to provide enough distinct categories to adequately distinguish among the large range of desktop computer products that will exist in the 2009-2011 timeframe
- EPA's draft2 categorization proposal did not address this concern: specifically...
 - Cat A was proposed by EPA as a "catch all" bucket for all iGFX based systems. Concern is that there is substantial idle span in iGFX systems (20W-70W) resulting from a variety of price points being offered; the resulting TEC target for Cat A creates significant challenge for mainstream iGFX systems to meet; need a way to delineate the emerging segments focused on cost with low-end iGFX from mainstream iGFX → especially since most ENERGY STAR shipping configurations are MS iGFX-based.
 - dGFX is clearly the most impactful system feature on idle power, however the application of dGFX on categories is inconsistent:
 - dGFX required in Cat B but no qualifier on any attribute. This is concerning since dGFX idle power impact can vary from 5W – 35W AC for a single card

- dGFX not required in Cat C but if deployed, required to be >128b LFB bus width. Makes no sense that dGFX required in Cat B but not Cat C.
- 4GB memory adder makes little sense and when coupled with 1st bullet above (catch all bucket) creates an artificial incentive for the bundling of excessive memory in mainstream and low-end systems just to get ENERGY STAR certification.

WORKSTATIONS

- v5.0 contains 2 new changes:
 - Assessment method (Eannual, usage model, fixed energy limit) and limited performance proxies.
 - Use of a newly developed benchmark to provide an active power quantification
- With the operational release of spec benchmark, ONLY the operability component has/is being evaluated
 - No data to ensure scaling to the capabilities/resources of the system
 - Act as an energy proxy for performance. Performance scaling is limited and non-validated.
- Assessment method, which uses adders instead of scaling, indicates that inactive power is a fixed value regardless of configuration (which features drives performance).
 - Results in an arbitrary loading value to translate Power to Energy
 - Assumes that workstations are simply used as high-end DT.
 - Does not coincide with the CAD/CAE project work that we observe end users conduct nor the criteria they use to invest in workstations.
 - Assessment method resorts to a predefined usage model and drives to the lowest power system that can perform the least amount of work
- Though we (EPA/Industry) may differ, thorough evaluation of the data is needed BEFORE trying to institute both a new method and a new benchmark.
- This data should be compared to the market demand, such that the market “premier” energy efficient systems coincide with the data derived by these methods.

The limited data submissions are in part due to the need to evaluate both of these new items, resolve testing issues, scaling validation, ensure we meet the intent of the specification, and incent the correct behavior. An example includes ability to run a 64bit OS to investigate scaling beyond 4GB.

ITI and its members do **not** recommend using any of the proposed v5.0 workstation tools for this current revision of the specifications. ITI and its member companies strongly **recommend** that we continue to use **v4.0** criteria for workstations while the industry and the EPA conduct the studies above.

The risk that we all face is inadvertently making the Energy Star brand for workstations become the low-end, poor performance end of the market.