May 11, 2009

Dear EPA,

Please find enclosed Intel comments and feedback on the Energy Star for Servers Specification v1.0 Final Draft, dated 4/24/09.

Intel remains committed and supportive of the US EPA's efforts to define energy efficiency goals and targets across the spectrum of computer products including the final draft proposed for Energy Star for Computer Servers, v1.0. We hope our input and our work with industry stakeholders continue to be beneficial in finalizing the Tier 1 specifications. We appreciate the direct, in depth discussions with the Energy Star team, which have resulting in addressing the significant concerns with the program. Intel is actively involved with industry stakeholders on the plans for an Energy Efficient Performance solution for Tier 2 and we anticipate continued dialog with the EPA and industry organizations as we begin implementation of Tier 1 and development activities on Tier 2. Please feel free to contact us if there are areas where we may be able to improve these interactions.

We continue to work extensively with our industry colleagues in Standard Performance Evaluation Council (SPEC), The Green Grid (TGG), Climate Savers Computing Initiative (CSCI), IT Information Council (ITI), Alliance for Telecommunications Industry Solutions (ATIS) and Storage Network Information Association (SNIA), in addition to supporting the Energy Star for servers program to deliver increasing energy efficiency.

If you have any questions please feel free to contact myself or Henry L Wong, henry.l.wong@intel.com.


Sincerely,


Lorie Wigle
General Manager
Eco-Technology Program Office

Intel appreciates the opportunity to provide the EPA with the comments and recommendations for the final draft of the ENERGY STAR Program Requirements for Computer Servers v1.0 specification. Prior to final release of the specifications, we hope the EPA can resolve these remaining points.

Given the short response time and the urgency in specification release, we have highlighted only key areas of concern.  Intel will work with other industry stakeholders to address the topic of blades, compliance data submissions, and dynamic data reporting accuracy.

## Summary

There are several improvements in clarity and explanation provided in the "final draft" of the Energy Star for Computer Servers v1.0 that are very helpful, specifically, the clarifications on 4 socket configurations, the generic I/O adder to system Idle power, and testing harmonization on 48Vdc systems*. There are however, several issues that require attention prior to proceeding with Tier 1. Addressing these issues should allow the industry to close Tier 1 development activities and focus those resources on energy efficient performance metric(s) for Tier 2.

*the -53Vdc testing tolerance needs to be +/- 1Vdc, not +/- 1%, to align with ANSI standards

Intel recommendations for Tier 1:

+ Blade systems: Although we understand the desire to approach Blades similar to other systems and apply a method for Idle testing, the idle method and variety of chassis/blade configurations preclude a consistent system idle power measurement approach. Given the difficulties and configuration variety, we believe treating Blades similar to 4 socket systems (Power Mgt, Reporting data, and No idle limit) is both the most expeditious and effective method to include this category of product. If not feasible, Intel is working with other members of the Green Grid for an alternate method of testing blades that would be presented in early June'09 for consideration by the EPA.

+ Power supply specifications: Even though power factor (PF) requirement for output loads of 75W are no longer required; the need to test for efficiency values at 10% for power supplies < 500W will increase testing and costs of the smaller sized power supplies, and provide little true gains in energy efficiency. We recommend removing the efficiency testing requirement at 10% level to help improve the adoption rate of these lower wattage power supplies.

+ Processor utilization reporting accuracy: We recommend removing processor utilization accuracy requirements because the current utilization calculation methods are actually estimates and vary between different operating systems and hypervisors. The reported value and its accuracy are specific to the operating system or hypervisor environment in operation. If the accuracy requirement is not removed, it will have the unintended consequence of forcing manufacturers to offer systems with specific operating systems which may not be compatible with those end users applications.

+ Data reporting to the EPA: Compliance data reporting and common data sheet should be split into two separate sections in the reporting tool and excel datasheet. The compliance data and details of the testing should remain anonymous to those outside of the EPA and its respective partner. This level of confidentiality is consistent with other Energy Star programs, such as Energy Star for Computers v5.0. The common datasheet contains parameters to provide installation and provisioning targets for end users of the particular model and configuration chosen. Intel is working with

industry members from the Green Grid and ITI to provide the recommended split in anonymous and common datasheet parameters by the early June'09. In the meantime, we recommend that the informational details be held confidential between the EPA and its partners.

+ Systems without local HDD: We recommend systems with no local hard drive be considered an Energy Star product if the product family testing (with a local HDD) has demonstrated compliance. Several system manufacturers offer diskless systems where the storage media and boot requirements are located on a Local Area Network (LAN).  Remote storage configurations are efficient options in some applications and data center operations. Providing this option in an Energy Star qualified product family will increase opportunities for energy savings in some data centers.