UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

February 20, 2009

Dear Computer Server Manufacturer or Other Interested Stakeholder:

The U.S. Environmental Protection Agency (EPA) welcomes your input on the **Draft 4** ENERGY STAR®
Version 1.0 Computer Server specification. Stakeholders are encouraged to submit comments on this
draft proposal to EPA **by March 20, 2009**. The effective date for Tier 1 of this specification has been
revised to May 1, 2009.

EPA would like to highlight a number of key issues for your consideration in this Draft 4:

Idle Power Requirements for Servers with Greater than Two Sockets (>2S)
EPA's goal for this Draft 4 is to recognize only the most energy-efficient models within the broad range of
server categories addressed by this specification. The Draft 4 requirements recognize differences in
performance and rewards systems that support these capabilities most efficiently. EPA recognizes that
current design trends are leading to increased server utilization, which effectively reduces the Idle time of
higher-performance servers, especially those servers with more than two sockets. Given these trends,
Idle power consumption requirements for Computer Servers with more than two sockets have been
removed from this Draft 4 specification. Instead, EPA will require that manufacturers enable processor
level power management features upon shipment of these systems, which will help to lower the energy
consumed were the system to enter into Idle. It is EPA's hope that manufacturers will continue to
promote consolidation and higher utilization in the marketplace.

Blade Servers
In keeping with the goal of broad market coverage, EPA intends to include requirements for Blade
Servers in this Version 1.0 specification contingent upon its ability to devise requirements comparable to
those for rack mount servers. However, a slightly different technical approach may be required for blades
and the supporting chassis to ensure a fair comparison with rack mount servers. EPA believes that power
supply efficiency and power and temperature measurement and reporting are requirements that map well
to Blade Systems. However, additional analysis of Idle power consumption requirements is needed.
Over the next several weeks, EPA will analyze the appropriate means to measure Blade Server
efficiency. As part of the comment process, manufacturers are encouraged to submit data to EPA using
the Blade Server data collection sheet found on the ENERGY STAR Web site at
www.energystar.gov/productdevelopment (Click on New Specification in Development).

Data and comments must be submitted to EPA **by March 20** to be considered for the Final Draft
specification. If an approach for Blade Servers cannot be determined by the Tier 1 effective date, EPA
will continue to work with manufacturers to add these products to the specification as soon as possible.

Standardized Data Reporting
EPA recognizes the value of standardized information to help data center managers better understand
the power characteristics, and improve the manageability, of their IT equipment. This Draft 4 includes the
following requirements:

- *Computer Server Measurement and Reporting*, which will provide valuable real time information to the data center manager in an open and transparent way; and
- *Standard Information Reporting Requirements*, via the Power and Performance Data Sheet, which supports a standardized format to inform purchasing decisions based on energy limitations and operational needs.

An updated draft of the Power and Performance Data Sheet is attached for stakeholder review and comment. Please note that manufacturers will be required to use the data sheet when promoting their ENERGY STAR qualified configurations and/or product families to customers.

Tier 2 Requirements

EPA intends to develop a Tier 2 specification that will replace the Tier 1 requirements. Tier 2 will focus on the development of criteria that recognize those Computer Servers that best combine computing performance and energy efficiency. This is especially necessary as the market and nature of Computer Servers continue to evolve. EPA intends to develop a Tier 2 specification that will provide manufacturers with the greatest flexibility in designing products that bring together improved performance with maximum energy efficiency.

The following are some of the key revisions made in this Draft 4 version:

- The requirement to physically label qualified Computer Servers with the ENERGY STAR mark has been removed. Use of the ENERGY STAR mark on the Web site, in product literature and on the Power and Performance Data Sheet is still required.

- New commitments regarding Value Added Resellers (VARs) have been added.

- Definitions for "Fully-Fault Tolerant Server", "Dual-Node Server", Managed Servers" and "I/O Devices" have been added to Section 1. Dual-Node servers can qualify for ENERGY STAR as long as each individual node meets the definition of, and the performance requirements for, a Computer Server.

- A new category for smaller power supplies ($\leq$ 500 Watts) has been created. Efficiency requirements at 10% and 20% loads are less stringent to account for the greater influence of fixed losses at these lower loading points.

- New Idle power categories for one and two socket Computer Servers have been added based on whether they meet the definition for Managed Servers, which requires the ability to operate with redundant power supplies and a baseboard management controller.

- Power allowances have been revised and I/O Devices and redundant power supplies have been added to the list of additional Idle power allowances.

- The data measurement and output requirements have been refined to only be applicable to 3S and 4S Computer Servers and 1S and 2S Managed Servers. A number of changes are also proposed regarding the accuracy and sampling requirements in an attempt to recognize currently available systems that have these capabilities.

- A new Idle power test procedure is proposed in Appendix A, based on test methods found in the SPECpower_ssj2008 benchmark and ENERGY STAR Version 5.0 computer specification.

- Manufacturers have the option of testing and qualifying Computer Servers at 100V for product intended for sale in Japan.

- Manufacturers now have the option of either submitting individual configurations or Product Families for ENERGY STAR qualification. A definition for Product Family is provided in Section 1: Definitions.

- The Tier 1 effective date has been revised to May 1, 2009. The proposed Tier 2 effective date of October 1, 2010 remains unchanged.

More details regarding EPA's rationale for making these changes are included in note boxes throughout the document.

Masked data sets used to derive Draft 4 requirements can downloaded from the ENERGY STAR Enterprise Server Specification Development Web site at www.energystar.gov/productdevelopment.

Comment Submittal
Comments on the Draft 4 specification should be sent to Rebecca Duff, ICF International, at rduff@icfi.com by **March 20, 2009**. All comments will be posted to the ENERGY STAR Product Development Web site unless the submitter requests that their comments remain confidential. If you support the Draft 4 specification, please state this in writing or via email. It is equally important that EPA understand which portions of the draft specification meet with stakeholder approval, in addition to identifying the sections that may need further revision.

Thank you for taking the time to review these draft requirements. Please feel free to contact me directly with any questions or concerns at (206) 553-6377 or fanara.andrew@epa.gov.

Sincerely,

Andrew Fanara
U.S. EPA
Climate Protection Partnership Division
ENERGY STAR Product Development Team