



NRDC Comments on
ENERGY STAR Program Requirements for Computer Servers Draft 2 Version 2.0

Submitted by:
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On behalf of the Natural Resources Defense Council (NRDC) and our more than 1.2 million members and on-line activists, we respectfully submit these comments on EPA's draft ENERGY STAR specification for computer servers draft 2 version 2.0.

As noted by EPA in its 2007 Report to Congress on Server and Data Center Energy Efficiency, data centers represent one of the fastest growing end uses of electricity in the U.S. A recent market analysis by J. Koomey¹ estimated that data centers consumed between 67 and 85 billion kWh in the U.S. in 2010, using the equivalent output of over 25 medium-sized (500 MW) coal-fired power plants, and costing American businesses over \$8 billion in electricity costs annually.

NRDC recognizes that the development of ENERGY STAR specifications for data center appliances is only one component of the integrated approach required to effectively tap into the energy efficiency opportunities available in data centers. Others include data center infrastructure efficiency (e.g. data center layout, HVAC systems, etc.), server utilization improvement and application optimization. However NRDC believes that the ENERGY STAR recognition program for servers is essential to make it easier for buyers of data center appliances, from large enterprise data center operators to small and medium business owners, to save energy and money by choosing energy efficient servers.

In summary, NRDC is very supportive of the direction EPA is taking with the Server 2.0 specification. The main changes in version 2.0 will facilitate participation in the program without compromising energy performance levels of qualifying servers, helping increase market penetration of energy efficient servers. Our comments are intended to increase the effectiveness of the specification to curb the growth in energy end use by data centers in the U.S. without

¹ J. Koomey 2011, Growth In Data Center Electricity Use 2005 To 2010

sacrificing data center capacity growth or performance.

We support the key changes in draft 2 version 2.0:

- Introduction of a 5-point product family structure;
- Introduction of active mode efficiency reporting.

We also support EPA's proposal to maintain idle power limits, full load disclosure, power supply efficiency and power management requirements. We encourage EPA to modestly reduce idle power limits from version 1.0, instead of maintaining them to the same levels as version 1.0 as currently proposed in draft 2.

Introduction of a 5-Point Product Family Structure

We support the introduction of a 5-point product family structure and agree with EPA that this new structure will reduce the amount of product testing necessary to obtain ENERGY STAR qualification while providing sufficient information to purchasers.

Introduction of Active Mode Efficiency Reporting

The efficiency of servers while performing work is a complex question involving multiple considerations such as the type of work, the level of reliability, availability and serviceability provided by servers. We welcome industry's progress in developing the Server Efficiency Rating Tool (SERT) but reserve our evaluation of the relevance of the tool until we have been able to assess test data. We need to make sure that the tool results reflect server efficiency at loads typical of typical use. Most servers operate at relatively low load levels (typically 5-15% in non-virtualized environments, 20-50% in virtualized environments). We will be looking for SERT results to accurately reflect server efficiency at these load levels.

In the mean time, we support EPA's approach to require active mode efficiency testing and disclosure through SERT in version 2.0, with a view to potentially set performance criteria in next version. This will enable the gathering of comprehensive data and the validation of the relevance of SERT for ENERGY STAR purposes.

NRDC Recommends to Modestly Reduce Idle Power Limits

NRDC supports EPA's proposal to maintain idle power limits in addition to active mode efficiency. Given that most servers typically operate at low average loads, and spend a significant amount of time in idle mode, an idle load limit remains essential to ensure servers are designed to minimize energy use at or near their typical operating point.

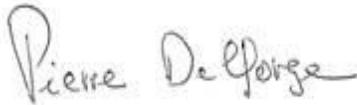
However we encourage EPA to modestly reduce idle power limits from version 1.0, instead of maintaining them to the same levels as version 1.0 as currently proposed in draft 2. While we recognize that version 1.0 pass-rates are not high enough to justify significant reductions, we

believe that the 5-point product family structure should help increase the pass-rate. Setting lower limits will continue the trend of reduction in idle power by computer servers which is necessary for data centers to do their part in the pursuit of science-based greenhouse gas reduction targets.

Effective Date

NRDC encourages EPA to finalize version 2.0 as soon as possible in order to accelerate the adoption of the program by the server industry. If the SERT benchmark is not ready in time, we encourage EPA not to wait for SERT and include active mode efficiency reporting in a version 2.1 when SERT becomes available.

Thank you for the opportunity to comment on the version 2.0 development process.

A handwritten signature in black ink that reads "Pierre Delforge". The signature is written in a cursive, slightly slanted style.

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