

Pantano, Stephen

From: Katsumi OUCHI [katsumi.ouchi.dp@hitachi.com]
Sent: Friday, May 21, 2010 10:20 AM
To: ENERGY STAR Storage
Cc: Katsumi OUCHI
Subject: Hitachi Response to Draft 1 Version 1.0 ENERGY STAR Data Center Storage

Dear Ms. Song:

Thank you for the opportunity to provide feedback on the US EPA's Draft 1 Version 1.0 of ENERGY STAR® Program Requirements for Data Center Storage. We have reviewed the draft and have the following comments and recommendations especially on power supply unit (PSU). We hope the EPA will take these into consideration in developing further drafts of ENERGY STAR Data Center Storage.

Hitachi's Comments and Recommendations on the Draft 1 Version 1.0 document**3. Energy Efficiency Criteria****3.1 PSU Efficiency Criteria****3.2 PSU Power Factor Criteria**

Hitachi believes that most of PSUs used in storage systems within SNIA Online 4 & Online 5 taxonomy categories are custom-made to achieve high reliability and long lifetime. In general, custom-made storage PSUs have a longer product life cycle than off-the-shelf storage PSUs. In addition, they require more time to develop high efficiency technologies without sacrificing high reliability and long lifetime. Therefore, Hitachi strongly recommends that criteria for storage PSUs NOT be applied as ENERGY STAR tier1 requirements for a certain period of time (e.g. for 3 years) so that each vendor has enough time to develop highly-efficient storage PSUs. Hitachi agrees that efficiency and power factor of each storage PSU shall be disclosed even during the period of time.

Hitachi is also concerned that criteria for storage PSUs will be set to the same level as those for server PSUs. Storage PSUs need extra components to handle much more transient current (i.e. HDD spin-up current) compared to server PSUs, and those components make it difficult to improve efficiency of storage PSUs. Therefore, Hitachi strongly recommends that criteria for storage PSUs be lower level than those for server PSUs when they are applied as ENERGY STAR tier1 requirements (e.g. Silver level for server PSUs and Bronze level for storage PSUs at the same time).

Finally, storage PSUs are often multi-output type (e.g. 5V and 12V), and multi-output PSUs are more difficult to improve efficiency of than single-output PSUs generally. Therefore, Hitachi believes that it is essential to differentiate between single-output and multi-output criteria and strongly recommends that criteria for multi-output PSUs be lower level than those for single-output PSUs (e.g. Bronze level for single-output PSUs and 80 PLUS® Basic level for multi-output PSUs at the same time).

Sincerely,

Katsumi Ouchi
Senior Researcher
katsumi.ouchi.dp@hitachi.com
Hitachi, Ltd.
www.hitachi.com