Summary
In this document, Climate Savers Computing Initiatives has highlighted our comments on the ENERGY STAR™ for Data Center Storage v1.0 draft 1 document, dated 4/9/10. At this time, our input focuses only on power supply requirements and definitions. We hope these comments and recommendations will be useful to EPA's plans and targets for the ENERGY STAR for Data Center Storage Tier 1 specification. We welcome the opportunity to discuss these topics further as the ENERGY STAR™ team develops the details in the iterative process towards the final Tier 1 specification for data center storage systems.

Climate Savers Computing Initiatives Power Supply Definitions and Requirement Recommendations

Climate Savers Computing encourages ENERGY STAR to seek alignment on power supply definitions for multi and single o/p units. Both 80Plus and Climate Savers Computing are in the process of redefining power supply units to better incorporate storage power supply units, which tend to install multi o/p rails. These units are installed in redundant configurations and use high line AC input, compounding the testing requirements, PSU efficiency, and power factor requirements across all computing applications. To stream line the definitions without creating numerous new categories and subcategories, Climate Savers Computing proposes the following revisions to power supply definitions.

Non-redundant power supplies are those power supplies used in non-redundant applications, typically for desktop PCs or small business unit server systems. They operate at low line AC input, typically 100Vac-127Vac. These power supplies should meet the power supply efficiency and power factor requirements of the current multi o/p power supply requirements listed in the specification. In addition, the fans should be included when testing for unit efficiency and power factor. For these power supplies, Climate Savers Computing recommends the following requirements:

Loading Condition	Power Supply Efficiency	Power Factor
20%	85%	0.8
50%	88%	0.9
100%	85%	0.95

These requirements will match the 80Plus and Climate Savers Computing power supply requirements for silver non-redundant power supplies.

Redundant power supplies are those power supplies used in redundant applications, typically in datacenters for rack mounted servers and storage units. They operate at high line AC input, typically 200-240Vac. These power supplies should meet the power supply efficiency and power factor requirements of the current single o/p power supply requirements listed in the specification. In addition, the fans should be excluded when testing for unit efficiency and power factor. For these power supplies, Climate Savers Computing recommends the following requirements:

Loading Condition	Power Supply Efficiency	Power Factor (<1000W)	Power Factor (>1000W)
10%	75%	0.65	0.8
20%	85%	0.8	0.9
50%	88%	0.9	0.9
100%	85%	0.95	0.95

These requirements will align with the 80Plus and Climate Savers Computing power supply requirements for silver redundant power supplies. This recommendation is based on 80Plus's efficiency test data of sample units. Their results demonstrate that the silver PSU requirements for storage power suppliers will be a challenging first step for storage products. Storage power supplies are characterized as typically having at least two output voltage rails, including a 5V rail in addition to the typical 12V rail in server redundant power supplies.

Climate Savers Computing Initiative

The Climate Savers Computing Initiative is a non-profit group of eco-conscious consumers, businesses and conservation organizations working to decrease computing energy consumption. As participants in the Initiative, manufacturers commit to producing energy-efficient PCs, servers and software, and members commit to using computer power management and purchasing energy-efficient computers. The Initiative is also a resource for consumers and IT personnel to learn more about reducing the power footprint of their computers—without any resulting loss of productivity. Climate Savers Computing is global consortium, operating in 53 countries through nearly 600 members of large commercial buyers, consumers, industry stakeholders and conservation organizations dedicated to increasing the energy efficiency of IT computing equipment, increasing the adoption and deployment of power management, and shifting user behavior to smart computing practices through development, deployment and adoption of higher efficiency standards, criteria, technology and best practices.

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