

To Kathleen Vokes, U.S. Environmental Protection Agency
From Marc Hoffman
Date April 2, 2010
Re ENERGY STAR Uninterruptible Power Supply Specification Framework

CEE is the binational organization of energy efficiency program administrators, whose members are responsible for ratepayer-funded efficiency programs in 41 states and 8 Canadian provinces. In 2009, CEE members' budgets represented over 88 percent of the total \$6.1 billion in state- and province-authorized program budgets. In short, CEE members actively work to make ENERGY STAR the relevant platform for energy efficiency across North America. The following comments were developed based on feedback by the CEE Data Centers & Servers Committee (the Committee) after a review of the ENERGY STAR Uninterruptible Power Supply (UPS) Specification Framework. The Committee recognizes that there are significant energy savings opportunities in data centers and believes that ENERGY STAR can be an important tool in the data centers market.

The development of an ENERGY STAR specification in the UPS product area is complex. The framework document discusses the broad scope envisioned for this specification, the various types of UPS systems offering different amenities, the fact that these products are used in different applications (e.g., from homes to hospitals to data centers) and in multiple configurations. One foundational question for EPA is: With so many elements and variables involved in UPS system energy performance, how will EPA make a labeling approach work that delivers on the brand tenets and promise of ENERGY STAR?

In addition to the fundamental question of why a labeling approach is the preferred path for this broad product area, the Committee has the following comments:

1. The Committee wants to avoid scenarios where an individual data center component is rated as ENERGY STAR compliant and is misconstrued to mean that overall data center system performance is therefore efficient. Many factors may contribute to a scenario where an efficient UPS device does not yield an efficient distribution system, overall efficient data center and significant energy savings including: system over-sizing; building in excessive UPS or power distribution system redundancy; usage patterns; or other configuration strategies. The Committee is interested in working collaboratively with EPA and industry stakeholders to develop national, consensus based products (e.g., UPS application guidance) that would drive the selection and purchase of super efficient UPS systems and overall efficient distribution systems.
2. In order to support program offerings for highly efficient UPS systems, efficiency programs must have confidence that identified, efficient products will deliver significant energy savings over an agreed upon baseline. This baseline must be informed by realistic

assumptions about system configuration and operating conditions. Initial energy efficiency program experiences in data centers indicate that a UPS system (one or several products working together) may operate at an “idle” state or low utilization state (less than 10%) for significant periods of time. For example, a new data center can house a UPS system that is designed for the full IT capacity of the facility when the full IT load capacity may not be reached for months or years. The Committee recommends that UPS system efficiency be tested and evaluated in the modes and at the utilization levels that are most representative of how these systems operate. The Committee requests that EPA share any available data on the distribution of time that UPS products typically spend at various load levels. If these data are not available the Committee recommends that EPA conduct appropriate product usage studies prior to releasing a specification. The Committee further recommends that EPA define an “idle” state and usage states based on usage data and then include testing and efficiency criteria that are based on these data (i.e., address the entire UPS system operating range).

3. Distribution system power quality is an important consideration for many efficiency program administrators. The Committee has concerns that current test procedures use resistive loads rather than the solid state loads (complex electronics) that create challenging power quality issues for utilities. The Committee recommends that the ENERGY STAR test method used to evaluate UPS systems address the challenging power quality issues associated with UPS systems that serve solid state loads (e.g., servers and other electronic devices).

Thank you in advance for considering and responding to these Committee comments as EPA considers an ENERGY STAR for Uninterruptible Power Supplies specification. Please contact Jason Erwin, CEE’s Commercial Sector Lead, with any questions.



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