Hewlett-Packard, Marty Marzinelli

Attached are comments from Hewlett-Packard on the EPA draft document.

Regards,
Marty Marzinelli

[From Attached Word Document]

Mr. Andrew Fanara
EPA Energy Star Program
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Andrew:

On behalf of Hewlett-Packard Company (HP), I am writing the U.S. Environmental Protection Agency (EPA) Energy Star Office to provide comments on the ENERGY STAR® Eligibility Criteria for External Power Supplies draft document (dated February 23, 2004).

Below, HP provides several suggestions to improve the proposed rules.

No-Load Requirements

The no-load requirements as shown in Table 3 of the draft document look acceptable. If the EPA considers future reductions to the no-load power levels, the EPA must evaluate the power impacts of circuitry required to reduce noise from electromagnetic interference. Basically, regulatory requirements for limiting the noise generated by the EPS would necessitate the use of added filters/circuitry that consumes some power. A preliminary estimate would be that at least 0.15W may be needed for this additional circuitry, and would start to be required on EPS at about 25W and greater.

Recognition of Power Factor Correction

Based on the information HP has about the original testing (Chris Calwell data) that was likely used as a basis for the EPA draft document, it is not clear that power factor correction (PFC) was not considered in the original data.

PFC is a method used to make reactive loads look more like simple resistive loads to the power grid. Stated another way, PFC makes complex alternating current loads (such as switching external power supplies [EPS]) act like simple loads.

PFC allows power distribution to operate at enhanced efficiency. Improving PFC reduces the amount of power generation and distribution infrastructure (smaller generators, smaller transformers, smaller wires, etc.). In addition to these practical benefits, PFC is required by law in a number of countries, including countries in Europe which would be affected by a new ES program.

PFC is implemented either by passive methods (add capacitive or inductive loads) or by active methods (circuitry which in essence isolates the mains circuitry from variations). Because of this, it will require slightly more power to run and thus will impact active mode EPS efficiency and no-load EPS power.

At the latest European Union Code of Conduct (COC) meeting (March 31, 2004), the COC group agreed to allow some additional power use by the PFC circuitry. They agreed that all EPS including PFC capability would be given two allowances: First, a 5% reduction in the active mode efficiency requirement was implemented (once the requirements hit 85% efficiency); second, a 0.2W increase in no-load power requirement was allocated. The EPA needs to consider PFC when establishing power targets. We recommend the EPA adopt the same approach and goals as the COC.

Consideration of Different Voltages

Referring to the Chris Calwell data, it is stated that all the EPS tested were 120V units. Since ES is an international program, we can expect the new EPS rules to be implemented in countries with different voltage and frequency requirements than those EPS that were tested. We think it is important the EPA look at EPS that would ship into these other regions to properly evaluate the impact on EPS used worldwide. It would also be important to evaluate universal EPS which can have the capability to work in more than one geographic region.

Active Mode Load Levels

The EPA has recommended averaging the results of test measurements at 25%, 50%, 75% and 100% loads to come up with an overall active efficiency number. HP recommends that active mode efficiency only be measured at the 100% load condition.

Most products do not physically operate at, or near all four load limits recommended by the EPA. Therefore to require the EPS be extremely efficient across the entire load range increases the costs of the EPS without substantially increasing energy efficiency.

EPS size and form factor are important considerations for customers of portable devices. In the case of laptop PCs, designing highly efficient EPS at loads other than full load may increase the size and form factor of the EPS, thus negatively impacting users.

The Chris Calwell graphs indicate that a large percentage of the reviewed EPS are actually very efficient across the entire load range. Some of these EPS may meet the new proposed active mode efficiencies, but a large number may miss the target by just a small amount. It is not clear that the economic investment necessary to upgrade EPS at these performance levels to become a few percent more efficient across their entire load range would justify the small improvements in energy efficiency.

Harmonization

The COC was the first serious effort to improve EPS energy efficiency. The COC has recently completed their 2005 goals for EPS and they differ from the EPA rules in a few important ways:

- The COC rules cover EPS up to 150W output power, ES rules go to 180W
- Active mode minimum efficiency requirements are different.
- Active mode measurement levels are different (COC has one, ES has four)

We encourage the EPA to harmonize their EPS rules to those of the COC. It is extremely difficult for product manufacturers to track and attempt to qualify to a large number of widely-diverse ecolabel rules. ES can eliminate those impediments by harmonizing with the COC. Also, if ES harmonizes to COC, it is likely subsequent EPS rules expected to develop in other regions (China, California, Australia, etc.) will also work toward harmonization.

We appreciate this opportunity to comment on the new draft EPS document. HP thinks incorporation of our ideas into the new document will encourage broader participation in the new ES program and result in substantial energy savings and pollution reduction associated with EPS.

Sincerely,

Marty Marzinelli