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Energy Efficiency of External Power Supplies and Battery Chargers : Opening Remarks

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Why Are We Here?

- ◆ Power supplies and battery chargers are found in many consumer electronic products.
- ◆ Recent research indicates a wide range of efficiencies and a potential for cost effective improvement.
- ◆ Efficient power supply design could cut U.S. electricity consumption by 1 to 2%.

Power Supply Background

- ◆ Power supplies operate at full load and partial loads.
- ◆ Partial load efficiencies are typically lower than full load efficiencies.
- ◆ Rated efficiency is always reported at peak efficiency, yet power supplies are seldom operated there.
- ◆ To date, most attention has been on standby/no load mode.
- ◆ Roughly 75% of all power consumed by devices with power supplies is in active mode.

Power Supply Background Continued

- ◆ Beware, simply addressing standby losses does not mean efficient operation in active mode.
- ◆ Therefore, we must consider both standby and active mode efficiencies.
- ◆ Both of these modes are needed in the test procedure.

Battery Charger Background

- ◆ Battery chargers require unique test procedure
 - Battery chargers are sold with both internal and external power supplies
 - Cell chemistry, charger circuitry design, and power supply design all affect battery charger efficiency
- ◆ Research into low power mode energy use of chargers points to significant savings opportunities
- ◆ Charge mode energy is less extensively researched, but a wide range of efficiencies have been found in research to date

Why a Consensus Test Method?

- ◆ Creates international consistency in product advertising and performance claims
- ◆ Allows straightforward exchange and peer review of test data
- ◆ Improves precision of savings estimates
- ◆ Reduces manufacturer testing and reporting costs
- ◆ Increases the opportunity for global consistency in government policies to encourage higher efficiency

Power Supply Policy Activities

- ◆ Several policy actions for external power supplies are under consideration:
 - EPA ENERGY STAR label
 - DOE standards per the National Energy Bill
 - California Energy Commission standards
 - Power supply design competition
 - European Code of Conduct
 - Product labeling and standards in China
 - Utility programs

Battery Charger Policy Activities

- ◆ Current policy relevant to battery chargers:
 - EPA's ENERGY STAR label for cordless telephones
 - 1 watt Executive Order by President Bush
- ◆ Policy actions under consideration for battery chargers:
 - DOE standards per the National Energy Bill
 - California Energy Commission standards

Power Supply and Battery Charger Policy Timeline

- ◆ Efficiency research on both products has been underway at NRDC/Ecos Consulting since 2001
- ◆ Test method work began in spring 2003 for power supplies and summer 2003 for battery chargers
- ◆ Proposals made to the CEC for standards on both products in summer 2003 for consideration in 2004
- ◆ EPA, CEC, and PSMA will make key power supply announcements at APEC in February 2004

Today's Goals

- ◆ Provide context for external power supply and battery charger test methods
- ◆ Review draft test methods
- ◆ Discuss and comment on test methods and proposed metrics
- ◆ Report the existing data
- ◆ Establish a process for finalizing test methods and collecting additional data

Today's Meeting

Co-Hosted by:

- ◆ Environmental Protection Agency (EPA)
- ◆ Pacific Gas & Electric (PG&E)
- ◆ Natural Resources Defense Council (NRDC)
- ◆ California Energy Commission (CEC)

As a reminder...

- ◆ The focus of this meeting is on the *test method and data collection process*.
- ◆ This is not a venue for political negotiations regarding proposed efficiency levels for mandatory standards or labeling programs.
- ◆ Respect anti-trust considerations – do not discuss specific market share, pricing, etc.