ENERGY STAR® for UPS - Draft 2 Initial APC Comments

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APC by Schneider Electric

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Thank you for the opportunity to comment!

- The spec development process continues to work well

- We look forward to continued dialog and cooperation with EPA

- We support the majority of the Draft 2 documents and will submit more detailed written comments by August 11

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Definitions

- Draft 2 UPS Application definitions exclude or improperly characterize some UPS types and are somewhat ambiguous

  - Server oriented UPSs below 1.5kW don't fit any definition

  - VFI UPSs below 1.5kW shouldn't be considered consumer

- We suggest the following UPS Class definitions:

  - Consumer UPS – A UPS that is Pluggable Type A Equipment (as defined by IEC 60950), with an input rating of less than or equal to 16A, with a VFD or VI Input Dependency Characteristic and complying with Class B emissions limits (per 47 CFR 15 or EN 55022).

  - Commercial UPS - A UPS that fails to meet the consumer definition and has an input rating of less than or equal to 63A.

  - Data Center UPS - A UPS with an input rating of greater 63A.

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Efficiency Requirements

- Draft 2 proposes a requirement of 97% efficiency for all UPS ≤ 1.5kW
  - No VFI UPSs can comply with this
  - VFD and VI UPSs need more margin (at least 0.5%)
- We propose the following:
  - Efficiency requirements are based only on input dependency and output power (class is not a factor)
  - VFI uses a formula at all power levels

Input Dependency	Output Power		
	≤ 1.5 kW	1.5 to ≤ 10 kW	> 10 kW
VFD	96.5%	97%	
VI	96.5%	96%	95%
VFI	$0.0099 \times \ln(P) + 0.80$		

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UPS with Multiple Normal Modes

- We support the weighted average concept with the current weighting factors

- We want assurance that UPSs with multiple sub-modes delivering the same input dependency are able to test and qualify in their highest efficiency sub-mode only, per the limits of that normal mode.

  - E.g.: A UPS with 2 VI sub-modes should be able to test only in the highest efficiency VI sub-mode against the VI limits
  - Only 1 test is necessary
  - No averaging is used
  - The sub mode used for testing is noted on the PPDS

- Similarly UPSs with multiple normal modes, each with multiple sub-modes, should be able to test in the highest efficiency sub-modes of both the highest and lowest input dependency normal modes and use the multiple normal mode averaging formula to qualify against the limits of the lowest input dependency normal mode.

  - Only 2 tests
  - The sub modes used for testing are noted on the PPDS

Environmental Requirements

- Not all US UPSs comply with RoHS
- Many that do comply with RoHS do so because of numerous exemptions
- We propose that RoHS shouldn't be a requirement
  - Alternatively, RoHS compliance could be listed on PPDS
- We suggest waiting for IEC 62040-4 to be completed before adding environmental requirements

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Test Method Variances from IEC 62040-3 Ed. 2

- Because testing is expensive and time consuming, the goal needs to be to test once and report everywhere
  - We must follow IEC 62040-3 Ed. 2

- Thermal stability time should be established by the manufacturer and declared on the PPDS
  - This will provide repeatable testing
  - Rules of thumb aren't accurate

- Sampling and averaging must be per IEC 62040-3 Ed. 2
  - Proposed test method requires 1 sample per second for 15 minutes
  - IEC allows any 3 readings not more than 5 minutes apart
  - Power shouldn't vary if thermal stability is achieved and battery is disconnected

Thanks for the opportunity to comment!