ENERGY STAR® Small Network Equipment (SNE):
Online Stakeholder Meeting
12/10/2009 11am-12pm EST

This document summarizes stakeholder feedback to the draft 1 test procedure provided during the December 10th call. Included in the feedback summary are a few points of clarification provided by EPA to call attendees where there was confusion or misinterpretation with draft 1.

Discussion Summary

- **Section 4 – Test Setup**
  - *Stakeholder Comment*: EPA should consider citing IEC 62018 when developing voltage and testing conditions.
  - *EPA Clarification:* The ENERGY STAR program has traditionally used 301. EPA will consider the 62018 standard.
  - ***Section 4.4***
    - *Stakeholder Comment:* Concern over randomized TCP ports Randomizing ports with packets could lead to device failure.
    - *EPA Clarification:* The intent was that a random port be selected at the beginning of the test to avoid a special ENERGY STAR port being developed. This will be clarified.
    - *Stakeholder Comment:* EPA should consider defining the range within which selection will be randomized.
    - *Stakeholder Comments:* UDP vs TCP
      - UDP would require in simpler (less expensive) signal generation test equipment.
      - Selection of protocol could yield big power differences in routers.
      - While TCP might require more complex test equipment, it enables easy tracking of packet loss.
      - When discussing TCP, there are two options – using a TCP client or requiring only TCP labeled packets to be transmitted.
      - For UDP, a simple count of packets in and packets out can reveal any packet loss.
    - *Stakeholder Comment:* A max allowable error rate should be defined. However, if a genuine TCP client is used for testing, retransmission will ensure that packet loss will be reflected in energy consumption.
    - *Stakeholder Comments:* IPv4 vs IPv6
      - Adhering to one or the other in testing could yield a power delta.
      - Perhaps devices could be tested with a mix of both.

        - It seems unlikely that any home devices would utilize IPv6, though small enterprise devices might.
        - The setting to enable one or the other is a detailed configuration item that could cause issues for correct third party testing.
    - *Stakeholder Comment:* Most of the settings discussed are not items a general customer or consumer is aware of.
    - *Stakeholder Comment:* The test procedure seems to be relevant for routers and AP's, but it does not seem to encompass in-scope products outside of these two areas.

- **Section 5 – UUT Configuration**
  - *Stakeholder Comment:* The UUT conditions need to be broken down by product category since not all features apply to all devices
  - *EPA Clarification:* Settings specified in section 5 that are not applicable to a specific product (UUT) can be ignored. Each applies only if the feature or setting is available.
  - ***Section 5.1***
    - *Stakeholder Comment:* More specificity is needed on device powering (is low-V DC also USB, what are measurement conditions if this is the case).
  - ***Section 5.2***
    - *Stakeholder Comment:* Cable length should be 10m for soho devices, 40m for enterprise
    - *EPA Clarification:* The length was selected to allow devices that scale power by cable length to be able to showcase this capability
    - *Stakeholder Comment:* The test procedure should not support functions that do not adhere to the 802.3 standard
    - *EPA Clarification:* The procedure is not intended to assess performance or compliance, only energy use. EPA seeks comment on the nature of these non-compliant implementations and how EPA could or should respond.
    - *Stakeholder Comment:* Some devices supporting phone capability idle all features when a phone cable is not connected. This would yield a difference in expected power between typical operation and the test.
    - *EPA Clarification:* EPA asks for further information on what types of devices exhibit this behavior.
  - ***Section 5.3***
    - *Stakeholder Comment:* The cable connected approach proposed may not be suitable
    - *Stakeholder Comment:* A single connected client is not a realistic simulation for the test

- **Section 6 – Test Procedure**

- *Stakeholder Comment:* The characteristics of IHADs should be further defined (voice/video/storage capability), as these features will impact power consumption.
- *Stakeholder Comment:* The test procedure should require that the test report include what type of WAN port was used, and possibly to specify this for testing. Some devices have multiple WAN ports available.
- ***Section 6.2***
  - *EPA Question:* Should testing duration be longer/shorter than the proposed 5 minutes?
  - *Stakeholder Responses:*
    - Might need to be longer to account for certain features.
  - *Stakeholder Comments:* Network testing
    - The small class of devices does not need to be tested at multiple speeds ("4 orders"). Instead, maintain a live network connection (~1 kbps) with "blips" of 10-20% utilization. Develop transmission rates based on ATIS and set data rate relative to this.
    - The network test could be modeled on a periodic file transfer.
    - Testing with sustained bursts at a particular rate obscures what the SNE can do to save power while idling.
  - *Stakeholder Comment:* In section c, define how traffic is shared between ports when more than one is connected.
  - *Stakeholder Comment:* **S**ection d, as written, does not account for SNE with multiple wireless radios. It is likely necessary to ensure the procedure tests two scenarios, one with the radios run separately, then in conjunction.
  - *Stakeholder Comment:* Why has a "half port" test been included? Is the ultimate intent to extrapolate per-port power from the wired tests, or to take each scenario on its own merit?
  - *EPA Clarification:* The half-port test provided a midpoint and is simpler than requiring port by port testing. EPA will investigate extrapolating the power values per port, but likely will keep the data for each test discrete from the others.
  - *Stakeholder Comment:* A provision should be added to ensure that the ports selected are random for each test (e.g. prevent unrealistic configurations optimized to the half port test – i.e. two 4-port switches being put together with one turned off for the test).

- Timeline
  - *Stakeholder Comment*: please provide more time to review the next draft.
  - *EPA Clarification*: EPA is extending the written comment period. Comments will be accepted via networking@energystar.gov until January 11, 2010.