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July 23, 2013

Mr. Robert Meyers
ENERGY STAR Product Development
U.S. Environmental Protection Agency
Energy Star for Office Equipment
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Energy Star Large Network Equipment Specification Version 1.0 Framework Document
and Draft 1 Test Method.

Dear Mr. Meyers:

The Telecommunications Industry Association (TIA) hereby submits the following comments on the proposed scope and testing methodology for the draft ENERGY STAR Large Network Equipment (LNE) Specification Version 1.0 Framework Document and Draft 1 Test Method.¹

I. INTRODUCTION

TIA represents the global information and communications technology industry through standards development, advocacy, tradeshow, business opportunities and market intelligence. TIA's hundreds of member companies' products and services empower communications in every industry and market, including healthcare, education, security, public safety, transportation, energy, government, the military and entertainment. Our members work through TIA's voluntary, consensus-based standards process to enhance the business environment for

¹ See ENERGY STAR Large Network Equipment Version 1.0, available at www.energystar.gov/products/specs/large_network_equipment_specification_version_1_0_pd.

telecommunications, broadband, mobile wireless, information technology, networks, cable, satellite, unified communications, emergency communications and the sustainability of technology. TIA is accredited by the American National Standards Institute (ANSI).

Many TIA members produce equipment implicated by the proposed ENERGY STAR Large Network Equipment (LNE) specification. TIA agrees that Version 1.0 of the LNE specification should focus on fixed routers and switches and agrees with the exclusion of security appliances, access point controllers and products whose primary function is to provide wireless connectivity from Version 1.0. Given the significant amount of investment by industry in developing standards and procedures for the energy efficiency of LNE products, TIA also emphasizes the need for the ENERGY STAR to reference and align its test procedures with those already developed by industry. TIA offers the following recommendations.

II. FRAMEWORK DOCUMENT DISCUSSION

1. TIA agrees with the EPA that the primary focus of Version 1.0 of the LNE specification should be fixed routers and switches.

Because of the complex, highly configured and customized nature of the network equipment under consideration for the LNE specification, an effective ENERGY STAR specification for this product category will require an incremental approach starting with a narrow scope and leveraging standards work already completed by industry. TIA believes that a targeted approach to the scope and definition of LNE will enable stakeholders to move forward in a timely fashion with the development an effective specification that accounts for a large share of the energy use of the product categories under discussion. Fixed routers and switches is the best focus for the LNE specification given the level of complexity and amount of standards work

already completed by industry. TIA also agrees with the exclusions agreed upon by EPA in the Comment Response Document.²

2. TIA agrees that security appliances and access point controllers should be excluded from Version 1.0 of the LNE Specification.

The Framework Document states that EPA is not currently planning to cover Security Appliances and Access Point Controllers in the specification and requests stakeholder feedback.³ TIA strongly agrees with the determination by the EPA not to cover security appliances and access point controllers in the Version 1.0 LNE specification. Inherent differences between the product categories, distinct minimum service levels to be tested, lack of data, as well as lack of industry consensus on a suitable test methodology or framework all support deferring specification development of security appliances, access point controllers and products whose primary function is to provide wireless connectivity to future revisions.

III. TEST PROCEDURE DISCUSSION

1. TIA emphasizes that EPA and DOE rely on existing voluntary, consensus-based industry standards and test procedures rather than develop new standards or procedures.

As EPA is aware, industry has already made significant progress in advancing development of definitions, metrics and test procedures relevant to the energy efficiency of LNE products. TIA recommends that the EPA rely on existing voluntary industry standards and test procedures for the initial specification rather than develop new procedures. Industry has already made significant investments in time, resources, and test equipment in the energy efficiency

² In response to stakeholder comments, EPA agrees with the exclusion of blade/server switches, optical transport, cellular base stations, DSLAMs, ROADMs, cable equipment, and HPC interconnects. See ENERGY STAR LNE Discussion Document-Proposed Testing Comment Responses, available at www.energystar.gov/products/specs/sites/products/files/ENERGY%20STAR%20LNE%20Discussion%20Document-Proposed%20Testing%20Comment%20Responses.pdf.

³ See ENERGY STAR LNE Framework Document at 3.

standards developed by industry, and uniformity between test procedures used by ENERGY STAR and industry will be critical. TIA recommends that if EPA finds deficiencies with existing industry standards and procedures that they notify stakeholders as soon as possible, so that these recommendations can be addressed with the corresponding standards development bodies. The voluntary standards development process followed by industry is a transparent, inclusive process that brings together multiple stakeholders. EPA should rely on and reference existing voluntary industry standards in moving forward with the development of a specification and test procedures.

2. TIA recommends that EPA align with the ATIS standard for testing number of ports

The Test Method document states:

Number of Ports: For each data port present on the UUT, there shall be at least one corresponding data port on the Test Equipment capable of sending and receiving data to and from the UUT at the highest operable line-rate standard.⁴

TIA recommends that EPA align with the ATIS note in Section 6.3 of ATIS-0600015.03.201 that states, “It is acceptable to use cascaded/snaked traffic between ports on line cards for base chassis power measurements that are not throughput related.” Requiring a corresponding test port for each port on the system would result in significant cost in test equipment requirements. Increased costs would be particularly pronounced for testing large systems.

The Test Method document also states:

Note: DOE believes that connecting half of the data ports during testing represents a more realistic scenario for many LNE products. For example, a switch deployed in an office environment may have cabling connecting all of its

⁴ See ENERGY STAR LNE Draft 1 Test Method Rev. June 2013, at 4, available at <https://www.energystar.gov/products/specs/sites/products/files/ENERGY%20STAR%20LNE%20Draft%201%20Test%20Method.pdf>.

downlink ports to wall-ports throughout the building, but there may not be an active device connected to all of the wall ports simultaneously (e.g. open ports in conference rooms for other users). Rather than defining which products are to be tested as full-port or half-port, the test method currently requires that all products be tested in both configurations in order to obtain more information on how the number of ports connected affects power usage. DOE estimates that adding a half-port Variable Load test will increase the overall test time by approximately one hour, and believes that the increased burden is relatively small when compared to other aspects of testing (product cost, Test Equipment cost).⁵

Full and half port testing will result in substantial increased test complexity and costs.

For example, it is estimated that total test time and cost using the proposed ENERGY STAR requirements of full and half port testing could double compared to the current ATIS test methodology.

3. TIA recommends that ENERGY STAR align with ATIS for variable load energy efficiency testing

The Test Method document states:

Note: The ATIS standard calls for LNE to be tested for partial utilization at either 10% or 30%, and bases the choice on product class. DOE does not currently provide product classification, and is therefore requiring that both 10% and 30% utilization levels be tested.

Note: The Idle test, originally proposed in the Preliminary Approach Test Method, has been replaced by the VLU test. When the utilization is reduced to 0.01% of max NDR, there will be relatively long periods of inactivity on each data port representing a state that is very similar to idle. This allows a product to effectively demonstrate power-saving features (e.g., EEE) while still processing received data without error.

TIA recommends the ENERGY STAR test method use the same Class definitions, TEER calculation parameters, and load profiles for Routing and Ethernet Switching Products as described in Tables 1 and 2 of Section 5.2 of the ATIS standard. Aligning the ENERGY STAR test method with existing accepted industry standards will be beneficial in terms of both test costs and simplification of reporting.

⁵ See ENERGY STAR LNE Draft 1 Test Method, at 7.

4. TIA recommends that PoE load testing be performed at full load test only.

The ENERGY STAR Test Method Document prescribes PoE Load testing be performed at 90%, 50%, and 25%. The most widely used test methodology in the industry is to test at full load. Running the test at different load conditions will increase test costs and time, requiring the development of new resistive load boards and to run additional test sequences.

5. TIA recommends to have the energy efficiency of fixed products tested as a whole with no specific requirements for the energy efficiency of the internal and/or external power supply.

IV. CONCLUSION

TIA appreciates the opportunity to provide additional input to the EPA and DOE regarding Version 1.0 of the LNE specification for Energy Star, and looks forward to continuing to work with the EPA, DOE and other stakeholders moving forward.

Respectfully submitted,

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