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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.

Dear Mr. Meyers:

The Telecommunications Industry Association (TIA) hereby submits additional comments on the proposed scope and testing methodology for the draft ENERGY STAR Large Network Equipment (LNE) Specification Version 1.0.¹

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 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).

¹ Energy Star Large Network Equipment Version 1.0, available at www.energystar.gov/products/specs/node/413.

Many TIA members produce equipment implicated by the proposed ENERGY STAR Large Network Equipment (LNE) specification. TIA members have long been supporters of the ENERGY STAR program in a variety of product categories and commend the program as a successful partnership between the EPA, DOE and industry to recognize innovation in energy efficiency. TIA's members greatly value the ENERGY STAR certification, and rely on this certification to market their products to retailers and consumers.

TIA wants the LNE specification to be successful and emphasizes that the complex, highly configured and customized nature of the network equipment under consideration for the specification will require an incremental approach starting with a narrow scope and leveraging standards work already completed by industry to advance an effective ENERGY STAR specification for LNE. In following up on TIA's previous comments, TIA provides the following additional input regarding the proposed scope and categorization of LNE and inclusion of Power over Ethernet (PoE) in the specification.²

II. DISCUSSION

1. TIA recommends an alternative scope of the LNE specification focused on routers and switches, and that the distinction between LNE and SNE rely on performance characteristics rather than the number of ports.

The current classification of LNE and SNE proposed in the Version 1.0 draft appears to attempt to define all network equipment under the LNE and SNE categories without a gap based on the number of ports and whether the equipment is rack-mounted. TIA believes that for ENERGY STAR purposes it is not possible to subdivide the entire network equipment domain into two broad categories, LNE and SNE. The current proposed distinction results in confusion as to which category certain equipment would belong. Rather than attempting to fit all network

² TIA Comments regarding Energy Star Large Network Equipment Version 1.0 (Nov. 30, 2012) *available at* www.energystar.gov/products/specs/sites/products/files/TIA%20Comments.pdf.

equipment into the SNE and LNE definitions, TIA recommends an alternative distinction focused on SNE and LNE as non-comprehensive product categories or subsets of selected equipment types that EPA chooses to cover under the ENERGY STAR program.

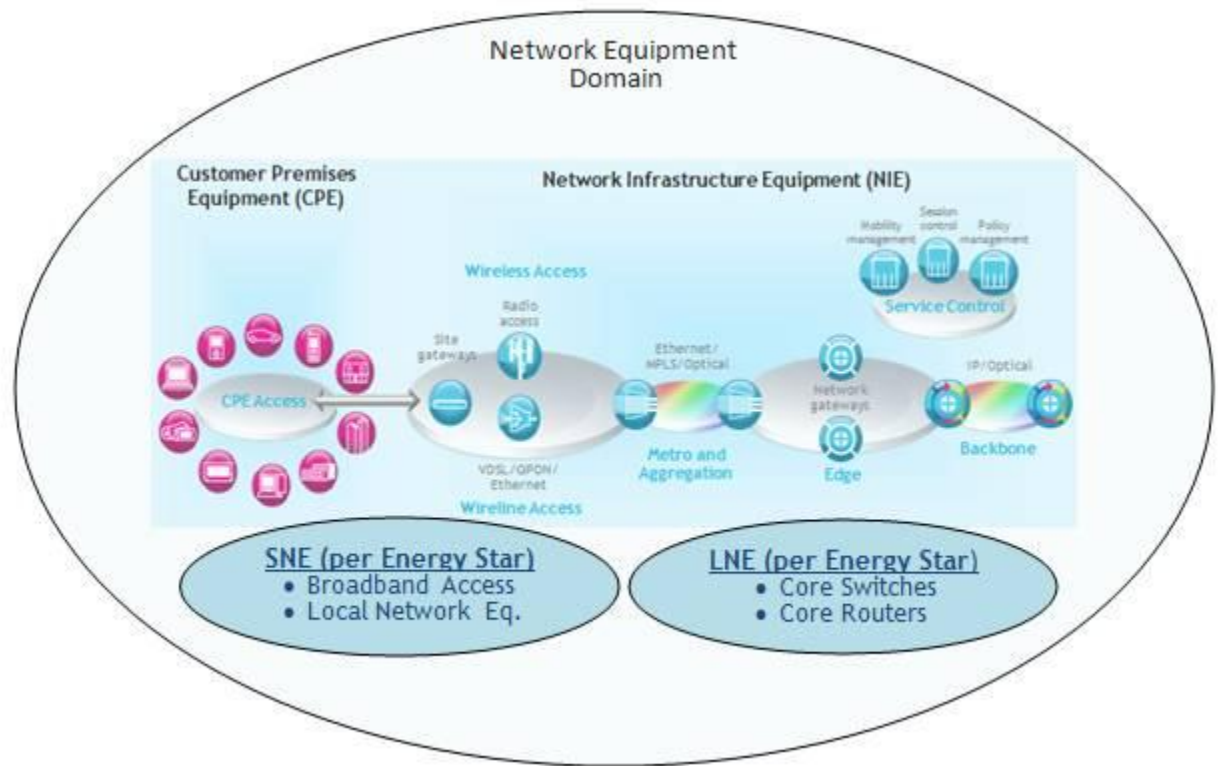


Figure 1: SNE & LNE as non-comprehensive subsets of network equipment domain

A more focused definition of LNE will result in a more rational approach that will allow the development of the LNE specification to move forward while minimizing confusion regarding which products fall into which category, and this approach will also help avoid the risk of certain equipment types falling under both categories. In terms of equipment types, TIA recommends that the LNE specification definition be narrowed to start with core routers and core switches and explicitly exclude other network equipment. Additionally, to distinguish LNE and SNE equipment categories, performance characteristics by equipment type will need to be

included in the definition of LNE. Performance-based product modality is what separates carrier and high-end enterprise equipment from small- and home-office gear rather than the number of ports. TIA recommends that the EPA consider utilizing the following definition for the LNE specification.

LNE is network equipment that is:

- ☐ designed for stationary operation, and
- ☐ primary configuration is for operation inside of standard equipment racks, and
- ☐ contains physical network port(s) that communicate network traffic with performance characteristics as defined by _____ (*to be filled in based on the equipment type*), and
- ☐ meets the definition of one or more of the equipment types: (1) core switches (2) core routers (with appropriate subcategories defined as well).

LNE would explicitly exclude: wireless access; wireline access equipment; optical transport equipment; security appliances, and other network equipment not meeting the above criteria.

To distinguish from LNE, SNE is network equipment that is:

- ☐ designed for stationary operation, and
- ☐ primary configuration is for operation outside of standard equipment racks, and
- ☐ contains no more than eleven (11) physical network ports, and
- ☐ meets the definition of one or more of the product types: (1) broadband access equipment (broadband modem; IAD); (2) local network equipment (access point, router, switch)

SNE would explicitly exclude: Femtocells.

TIA believes that a targeted approach to the scope and definition of LNE will enable stakeholders to move forward with the development an effective specification that accounts for a large share of the energy use of the product categories under discussion.

2. TIA recommends that Power over Ethernet (PoE) Equipment be included in the LNE specification as a separate product category with unique testing requirements.

The discussion document asks if PoE equipment should be classified in the LNE category. Many products used in enterprise networking rely on PoE, and TIA recommends that

PoE be included in the LNE specification. Because of its unique characteristics from other network equipment in that it shares many attributes with external power supplies, TIA recommends that it be included as a separate product category with unique testing requirements from other equipment in the LNE category (e.g. PSE or power sourcing equipment - network devices that will provide power in a Power over Ethernet (PoE) setup, e.g. per IEEE 802.3).

3. TIA recommends that the LNE specification be further subdivided based on whether products are designed for large-scale and small-scale networks.

Products designed for large-scale networks have design requirements that go beyond what is required for small-scale networks impacting the energy use of the equipment, which will require a division of the two categories for the systems to be effectively assessed on the same scale. Equipment intended for large-scale networks is often mission critical requiring higher availability (ie. hot-swappable components and running configuration/software updates) and redundancy (ie. redundant power supplies, fans and routing) than what would be required in most small-scale networks. Large-scale networks are often configured to be scalable, including stacking or clustering support, including a stack connector or stack port, which can also impact the energy use of the equipment. Large-scale networks also require more complex routing support than small scale networks including link-state, redundant, and border routing, placing greater energy requirements on the system. Large-scale networks also often must support PoE PSE function where small-scale networks do not. PoE utilizes components that impact the energy consumption of the system. Because of the differences inherent in products designed for large-scale and small-scale networks, a subdivision will need to be created between the two for the development of an effective specification.

III. 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,

TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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