

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



OFFICE OF
AIR AND RADIATION

August 4, 2014

Dear Large Network Equipment (LNE) Manufacturer or Other Interested Party:

The U.S. Environmental Protection Agency (EPA) welcomes your input on the attached Draft 1 Version 1.0 ENERGY STAR[®] LNE specification, as well as the attached Draft 2 LNE Test Procedure developed by the U.S. Department of Energy (DOE). Comments on these documents are due no later than **August 29, 2014**.

The goals of this Draft 1 specification and supporting documents are to: 1) refine and present specification definitions and structure; 2) share the Agency's proposed structure and initial requirements; and 3) provide an update on the proposed testing of LNE.

The following are some of the key elements of this Draft 1 specification:

- Section 1: Definitions have been added and revised to capture stakeholder feedback on the Framework Document, provide a more cohesive set of LNE product type definitions, expand on component/feature definitions, and revise text for clarity.
- Section 2: The scope section has been expanded to provide clarity on the intended scope of Version 1.0. Stakeholder feedback supports EPA's proposal to continue limiting the scope of LNE to switches and routers with greater than 11 physical wired ports and that are sold in fixed and/or modular configurations.
- Section 3.2: Power supply efficiency and power factor requirements have been proposed.
- Section 3.3: The energy efficiency feature requirements outlined in the Framework Document have been revised to provide more clarity and focus on the features which are achievable in products on the market now based on stakeholder feedback.
- Section 3.4 and 3.5: EPA has provided a short outline of this section to spur further conversation on the nature of active efficiency requirements for large network products. Due to their complexity and configurability, modular products (3.5) are not expected to include efficiency levels but will feature reporting requirements.
- Section 4: Standard Information Reporting Requirements have been proposed to provide stakeholders with the product data that EPA intends to collect through the certification process.
- Section 5: Data Measurement and Reporting requirements have been proposed for input power and temperature based on stakeholder feedback. Stakeholders are asked to provide additional feedback on whether requirements to report performance focused metrics (e.g. throughput, latency, and utilization) would be beneficial to users of this product category.

Based on stakeholder comments, DOE has made several modifications that are reflected in the LNE Draft 2 Test Method:

- Removed Power over Ethernet (PoE) load testing: DOE has removed the PoE load test, as well as all requirements pertaining to PoE Load Testing.
- Separate high and low utilization tests – Test Method Section 6: DOE has split the test procedure

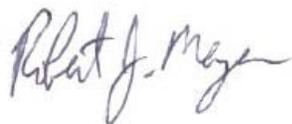
into two sections, with one intended to be representative of high utilization scenarios and the other intended to be representative low utilization scenarios.

- Narrower ambient temperature requirement – Test Method Section 4.B): DOE has increased the center-point and narrowed the range of the allowable ambient temperature required during testing.
- Allow non-copper based pluggable modules – Test Method Section 5.1.A)5)e): DOE has removed the requirement that all pluggable modules used during testing be copper-based if none are included with the unit under test (UUT).
- Homogenous interchangeable modules – Test Method Section 5.1.A)5)e)i): DOE has added language that requires all data ports of each group be of the same type and speed when interchangeable modules are used.
- Test data format – Test Method Section 5.1.A)5)d)i): DOE has added a requirement that all generated test data must be formatted as internet protocol version 4 (IPv4) transported using Ethernet.
- Idle-link period distribution – Test Method Section 5.1.A)5)d)iii): DOE has added a requirement that requires the idle-link period to be uniformly distributed.
- Mesh configuration – Test Method Section 5.2.A)4): DOE has changed the requirements for determining whether a product must be configured using full-mesh or dual-group partial mesh.
- Half-port testing – Test Method Section 5.1.A)5)a)iii): DOE has changed the half-port testing, requiring all uplink ports be connected when the dual-group partial mesh configuration is used.
- UUT reconfiguration – Test Method Section 5.1.A)1)b): DOE has added a requirement that prohibits a UUT's configuration to be modified after testing has commenced.
- UUTs with multiple power supply units (PSUs) – Test Method Section 5.1.A)4)a): DOE has changed the requirements for how to measure the power of products that have multiple PSUs.
- Simple IMIX distribution – Test Method Section 5.1.A)5)d)ii): DOE has added a column to the table that describes the Simple IMIX distribution that shows the required Ethernet frame size corresponding to each IPv4 Packet size.

Stakeholders are encouraged to provide feedback on the specific concepts and definitions presented in this document, as well as any comments of a more general nature, to largenetwork@energystar.gov by **August 29, 2014**. EPA will host a webinar on **August 13, 2014 from 2-5 PM Eastern** to encourage further discussion. **Please click [here](#) to register for the webinar.**

Communication between EPA and stakeholders is critical to the success of the ENERGY STAR program. Any and all creative suggestions for improvements to the basic ENERGY STAR approach outlined in this document will be considered for inclusion. Please direct specification related questions to RJ Meyers, EPA, at Meyers.Robert@epa.gov, or 202-343-9923; or John Clinger, ICF International, at John.Clinger@icfi.com, or 215-967-9407. Please direct any specific test method questions to Bryan Berringer, DOE, at Bryan.Berringer@ee.doe.gov, or 202-586-0371.

Sincerely,



Robert Meyers
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ENERGY STAR for LNE