



March 24, 2017

To: Ryan Fogle, EPA Manager, ENERGY STAR for IT and Data Center Products;
Matt Malinowski, ICF International

Lexmark comments on ENERGY STAR Imaging Equipment Version 3.0 Discussion Draft

Lexmark submits our comments to the questions listed in the Energy Star Imaging Equipment Version 3.0 Discussion Draft Document.

Overall Comments:

- Lexmark is concerned at the expedited schedule for the revision of Energy Star Imaging ! Equipment. We do not believe this schedule is feasible. !
- Lexmark believes that this could be the last Energy Star specification revision for Imaging Equipment for a long time. Therefore, any revision should be complete and well thought out and not rushed through the process.

Network Activity

1. ! What is the easiest, most effective way to generate representative Simple Network ! Management Protocol(SNMP) requests? !

The easiest and most effective way to control these packets and guarantee they are the same for all printers is to use a 3rd party tool, open source script or batch file to generate the desired traffic at a set interval. Lexmark has not found an easy way to control these requests in a typical Windows environment using a stock windows setup. If the goal is to generate network traffic that could be seen on a typical home or corporate environment in a controlled manner then a separate tool would have to be used.

In addition to the generation of standard network traffic, the specification of a quiet test network also needs to be defined.

Both of these specifications would increase the burden on 3rd party test houses and audit testing.

2. ! Does an increase in the number of devices on the network result in more “wake ups”? If so, by what specific mechanism(s)? EPA requests data in support of any responses to this question. This depends on the type of device and how the printer handles network traffic. Linux boxes will be very quiet but Windows and Mac’s will have significantly more network traffic. Windows and Mac boxes will do MDNS queries during boot and periodically thereafter. Certain network

administrator tools and print drivers that monitor printer status on a periodic basis will use SNMP packet to query settings. This also depends on how the printer chooses to respond to most packets.

Lexmark has taken the approach of being “good network citizens” so our products will respond to most packets in the modes used for energy testing. Lexmark believes most customer environments want the printer to respond to normal network traffic directed at them.

3. ! What computer or network behaviors negatively impact the imaging equipment's ability to remain asleep?
This depends on the responsiveness of the imaging equipment. Lexmark has taken the approach of being “good network citizens” so we will respond to most packets. Lexmark believes networked imaging equipment should respond to MDNS, SNMP queries as well as other normal network traffic while in sleep mode.

Lexmark believes most customers want the product to respond to normal network traffic directed at them. In our experience, corporate IT administrators will configure their devices for maximum responsiveness.

4. ! Will there be any adverse impact on measurements for products with digital front ends (DFEs) if one of the proposed test method revision options is adopted?

Lexmark does not utilize DFEs.

5. ! What specific user actions should be prescribed in option A to ensure that product behavior is tested against SNMP and other relevant data packet types?

See question 1.

6. ! If option B is chosen, how can testers ensure that the required types of data packets are transmitted?
Can this process be done without special software?

We are still investigating but we feel special software would be the easiest way to generate required data packets. As answered previously, a definition of a quiet network would also be required.

7. ! What proportion of the market can we expect to be impacted by the proposed test method revision options?

We would expect all network connected products, including WIFI only models would have to be retested to ensure common results from the new test methods. Existing data could not be used.

Additional Comments on Network Connectivity:

A) Lexmark believes that the proposed changes to test method would require retesting of a majority of products. The current test data is not the same test environment as what is proposed. In addition, the EPA would need to clarify what is a failure and what is passing behavior out of the product.

b) Lexmark also believes that products should be tested on a level playing field where the product is acting as a “good network citizen” rather than a case where the product is unresponsive to normal network traffic.

Paper Usage Assumptions

8. ! EPA seeks feedback on the validity of this stakeholder's claim and how this usage assumption should be calculated. Data to support claims of other usage assumptions is encouraged.
While interested parties may not be able to agree on the best usage assumptions for imaging equipment, all parties can agree that the current assumptions are incorrect.
9. ! EPA seeks any data on the relationship between product speed and paper usage.
This data is available through BLI reports which the EPA has access to. Average Monthly Volume, as the metric is known, is tied to print speed but also to the type of product (SMB, SOHO, Small workgroup, large workgroup, etc). Print speed itself cannot completely account for printed pages.
10. If enough data is provided to support updating the usage assumptions, EPA is considering updating Equation 5 to account for this change. Are there other approaches that EPA can consider to incorporate updating usage assumptions into the specification?
Another option is to use the existing job energies and simply calculate the TEC using lower jobs per day, like 6, 8 or 10 jobs per day instead of the normal value. This reduces the effective printed pages in the TEC test. This allows the use of existing test data to set new TEC limits.

Other Paper Usage Comments:

- While the TEC metric was not designed to represent real life usage patterns, the TEC metric is used by both the US EPA, the EU government as well as customers, media and NGOs as the official "gas mileage" of imaging equipment. Since this is the current situation, the EPA must perform due diligence to ensure that the values presented are both repeatable but also representative of actual use.
- The paper usage assumptions in the TEC metric are used by other agencies to calculate the paper and supply usage of imaging equipment. Since the TEC metric is not correct, this leads to incorrect environmental assessment of products in this category.

Maintenance Modes

11. EPA requests feedback from stakeholders on the prevalence of this issue (Maintenance modes) and encourages any available data on the frequency, duration, and power consumption of typical maintenance modes.
Lexmark considers the example given as a fringe case and believes that maintenance and calibration modes should continue to be disabled for testing to achieve consistency between certification and audit testing.
Typical Maintenance and Calibration models for electrophotographic products occur at the end or beginning of print jobs. These modes are commonly set at specific intervals of usage and therefore can vary depending on actual customer usage, but typically do not occur at the intervals or for the duration specified in the discussion draft document.

Standby Definition

12. Do stakeholders believe that this change would add clarity to the ENERGY STAR specification? !
Lexmark believes this change would add confusion rather than clarity. !

13. To what extent, does making this change impact international harmonization? !
Lexmark believes this change would add confusion rather than clarity. !

Additional Information: The standby definition used in Energy Star was inherited from FEMP's 1 W requirement. This was also used in IEC 62301:2005 and is a broad definition. In 2011, IEC 62301 split standby into 3 different definitions - Off, Standby and network standby. The IEC 62301:2011 definition of standby is not used in Imaging Equipment products. However, off and network standby are used in Imaging Equipment. The power limits and original definition in Energy Star V2.0 align with calling this mode "Off" or "Plugged-In Off". To create a different definition for "standby" should not be considered.

Professional Products

14. Does the proposal effectively differentiate professional products from commercial products for the purposes of the ENERGY STAR scope?
15. What data are stakeholders able to share related to the duty cycle of professional products?
16. Are there any other initiatives that EPA should consider that would allow ENERGY STAR to continue including these products within the scope of the program?

Lexmark does not manufacture product models in this category.

WIFI Connections

17. EPA appreciates any feedback and relevant data on this topic, including whether the current set of OM networking allowances are appropriate for current hardware implementations.

Lexmark agrees with the EPA that WIFI is often a higher usage connection than USB for models in the SOHO and SMB space in the US. This cannot be said for outside North America or Europe. Therefore, it makes sense to move the WIFI connection above USB in Table 6. However, for TEC products that have a wired Ethernet connection, this connection continues to be the primary connection for our customers.

3D Printers

18. Is there stakeholder interest in ENERGY STAR expanding the category to include 3D printing within the scope of the specification? If so, EPA would be interested in the following topics:
- a. ! Is there a test method for 3D printers that could be used to test for idle and active power? Or can the existing test method for printers be amended to incorporate the appropriate elements to test 3D printers?
 - b. ! Is there data available on the energy consumption of these products?
 - i. ! If not, would stakeholders be willing to provide data to develop a baseline for these products to allow ENERGY STAR to develop a dataset to differentiate models?
 - c. ! Are there challenges or limitations that ENERGY STAR should be aware of when assessing this product category?
 - d. ! What is the size of the 3D market and what are the best estimates for the growth of this market in the future?
 - e. ! Are there other environmental considerations in this space that ENERGY STAR could encourage that stakeholders would be interested in?

Lexmark does not support the inclusion of 3d printers in the Imaging Equipment specification. The technology and stakeholders are completely different than this specification and would require their own unique Energy Star specification.

Scope and Additional Considerations

19. EPA is interested in stakeholder feedback on the potential to exclude standalone fax machines, standalone copiers, digital duplicators, and mailing machines within the ENERGY STAR product scope, particularly additional data regarding the market for these products, the potential for innovation in this space, and other considerations that EPA should take into account.

The product categories provided are segments of the market where there is little investment in design of new products. Therefore, little improvement in energy efficiency can be expected. Since Energy Star is a federal procurement requirement, Lexmark recommends that the EPA evaluate the product in the marketplace and set criteria such that 25% of the available models achieve the specification. This will provide federal purchasers with sufficient product availability to fulfill federal procurement needs.

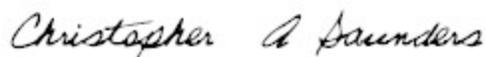
20. EPA is aware of products on the market today that no longer utilize a cartridge, but rather refillable ink tanks, which are believed to reduce waste and be more sustainable. EPA is interested in learning more about these products as well as potential ways that EPA could encourage or highlight the adoption of these products.

If the EPA is interested in encouraging these products, we recommend that the EPA do so in a program separate from Energy Star. We continue to recommend that Energy Star focus on energy efficiency of products.

21. Are there other best practices that ENERGY STAR could encourage or adopt within the imaging specification, such as alerts for users and/or limiting the maximum machine delay time for TEC products?

1) Lexmark does not support alerts for users when settings changes affect energy efficiency of products. This would require a continuous alert for almost all changes since most changes do affect some aspect of the energy consumption of products. 2) A maximum sleep mode delay time of 4 hours is standard for TEC products based on earlier Energy Star requirements. We do not believe it is necessary for specify this value. In addition, Blue Angel, which many Energy Star TEC models also achieve has specified limits for the maximum customer settable default delay time to sleep, so this is covered by other Eco Labels.

Regards,



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