

Summary and Response to Stakeholder Comments

ENERGY STAR Program Test Method for Determining Imaging Equipment Energy Use Draft Final (Rev. Feb-2012)

Commenter	Document Section	Topic	Subtopic	Comment	Preliminary Response
JBMIA	Section 2	Applicability		Line 21 should read "Table 1 shall be used to determine the applicability of each section of this document."	DOE agrees and has revised the Final Test Method to read: "Table 1 shall be used to determine the applicability of each section of this document.."
JBMIA	Section 2	Applicability		There are two Table 1's. Remove one.	DOE agrees and has fixed the issue in the Final Test Method.
HP	Section 4	Measurements	Uncertainty	HP requested that DOE provide a detailed mathematical example of how the uncertainty calculations are done.	DOE has included a footnote referencing IEC 62301 Ed. 2.0 App. D in the Final Test Method, which provides an example demonstrating how to calculate uncertainty. DOE intends for only the uncertainty due to the measurement instrument to be calculated.
Xerox	Section 4	Input Power Requirements		The only voltages listed for North America are 115v, 230v, and 100v. We offer products that use 208v in North America. We would request that 208v 60hz be added as a valid voltage for North America or some provision be made for 'other' voltages.	DOE has updated Section 4.1.B)2) of the Final Test Method to state the following: "If a product is rated to operate at a voltage/frequency combination in a specific market that is different from the voltage/frequency combination for that market (e.g., 230 volts (V), 60 hertz (Hz) in North America), the unit should be tested at the manufacturer rated voltage/frequency combination for that unit. The voltage/frequency used shall be reported."

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JBMIA	Section 4	Measurement Uncertainty		Please confirm that the provisions 4.3.2 (supply voltage waveform) and 4.4.1(power measurement uncertainty) of IEC 62301 Ed.2.0 are not applied to Energy Star Test Method.	This is correct. Section 4.1.A) of the Final Test Method states: “In the event of conflicting requirements, the ENERGY STAR test method shall take precedence.” The Final Test Method specifies requirements for supply voltage and measurement uncertainty, which take precedence over sections 4.3.2 and 4.4.1 of IEC 62301 Ed. 2.0.
Fujitsu	Section 6	Networking Connections	Line 143	What state is indicated from the word "active" at the Sleep Mode? Meaning of the word "active" should be defined clearly. FCPA understands from the draft that when the UUT is in the Sleep mode, each interface (such as Ethernet, Wi-Fi, USB, etc.) is "active" if UUT can receive wake-up by a signal from Interface.	Section 6.1.C) of the Final Test Method states: “C) <u>Network Connections</u> : Products that are network-capable as-shipped shall be connected to a network. 1) Products shall be connected to only one network or data connection for the duration of the test.” The network connection to be used for testing is specified in Table 6 and is considered “Active.” This is the only network connection considered to be “Active” during testing.
Xerox	Section 6	Product Speed		Please clarify the first bullet in table 5 “ s_p is the maximum claimed monochrome speed in pages per minute when processing the given media”. We believe that this should be images per minute (to maintain consistency with the first line in the chart “Product Speed, s (IPM)”.	DOE has updated Table 5 in the Final Test Method to read: “ s_p is the maximum claimed monochrome speed in images per minute when processing the given media,...”

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Keystone Certifications	Section 6	Service/Maint Modes		<p>What if a product automatically goes <i>there</i> by designed default (normal use) (perhaps to analyze and take most efficient action)? You are testing against default.</p> <p>Clarified comment after discussion with stakeholder: concerned that service/maintenance modes could be a mode/function that the unit enters before each job to ensure the unit operates in the most efficient manner possible.</p>	<p>Based on the description of service/maintenance modes in the Final Test Method, the types of modes described by the stakeholder (modes the unit enters before each job) would not be considered service/maintenance modes and are not required to be disabled for testing.</p>
Keystone Certifications	Section 6	Service/Maint Modes		<p>As above, the substitute job replacement sounds unfair. If c. remains, please command that mode occurrence and all results and actions are reported.</p>	<p>DOE has updated Section 6.1.D)3) of the Final Test Method to read:</p> <p>“If service/maintenance modes cannot be disabled and a service/maintenance mode occurs during a job other than the first job, the results from the job with the service/maintenance mode may be replaced with results from a substitute job. In this case, the substitute job shall be inserted into the test procedure immediately following Job 4, and the inclusion of a substitute job shall be reported. Each job period shall be 15 minutes.”</p>
JBMA	Section 6	Fax Machine Configuration		<p>Does 'products incorporating fax machines' mean 'MFD with fax capability'?</p>	<p>Yes. DOE has updated Section 6.2.A) of the Final Test Method to read:</p> <p>“All fax machines and MFDs with fax capability...”</p> <p>DOE has also included Section 6.2.A)2) in the Final Test Method to state that only fax machines shall be tested using the fax capability. The language is as follows:</p> <p>“Only fax machines shall be tested using the fax capability. MFDs with fax capability shall not.”</p>

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Canon	Section 6	Product Speed		<p>The second sentence of Section 6.1.A)3) should be modified as follows:</p> <p><i>When a manufacturer intends to get a product qualified in a certain market by making use of existing test results already conducted for the product in another market using other sizes of paper (e.g., A4 versus 8.5" × 11"), and if its maximum claimed speeds differ in producing images on different sizes of paper, the highest speed shall be used.</i></p>	<p>DOE agrees with the stakeholder and has included the following language in the Final Test Method:</p> <p>"When a manufacturer intends to qualify a product in a certain market by making use of test results that qualified the product in another market using other sizes of paper (e.g., A4 versus 8.5" × 11"), and if its maximum claimed speeds differ in producing images on different sizes of paper, the highest speed shall be used."</p>
Ricoh	Section 6	Product Speed		<p>The product speed for calculations and reporting should be determined in the as-shipped mode.</p> <p>The current draft test method allows manufacturers to use the maximum claimed print speed as the product speed for all calculations and reporting. It is deeply concerned with the loophole that some manufactures can intentionally claim the higher print speed such as 'draft mode' to obtain loose TEC limits.</p>	<p>After reviewing comments, DOE has decided not to modify the requirements for reporting and calculation speed in order to ensure all units are being reported at the same speed.</p> <p>Manufacturers will report the resolution values listed in the printer driver for both standard and draft speed, if available, so that EPA can better understand stakeholder "as-shipped" behavior.</p>
Keystone Certifications	Section 7	Battery Operated Units		<p>For the sake of testing in normal operation: I suggest second line (205) should read: "source, the battery may be removed for all tests...."</p> <p>And the third line (206) should read: "pack is not a supported or desired configuration,"</p>	<p>DOE believes that batteries should be removed before testing to ensure that all power consumed by the UUT is measured and no additional power is drawn from the battery. As such, DOE has made no changes to the language concerning the removal of batteries in the Final Test Method.</p>

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Keystone Certifications	Section 7	Battery Operated Units		Is there any significance to the 5 hour period in the battery charging requirements; the third step only requires 1 hour.	The battery charging requirements are based on the DOE test procedure for Battery Chargers contained in 10 CFR 430 Subpart B. To maintain consistency, ENERGY STAR works to harmonize with DOE test procedures, where possible. Step iii), as written in Section 7 of the Draft Final Test Method, was written for the ENERGY STAR Test Method for Uninterruptible Power Supplies and was included in the Imaging Equipment Test Method as an oversight and has been changed in the Final Test Method to state: “If there is no indicator and no time estimate in the instructions, the duration shall be 24 hours.”
Keystone Certifications	Section 7	Battery Operated Units		Are we not interested in energy consumption of Charge Mode in this category? Any tie to Battery Chargers specification?	DOE and EPA require that batteries be removed from all battery operated products in order to ensure that all power consumed during operation is measured over the ac mains. For those units from which the battery cannot be removed, DOE and EPA recommend fully charging the battery before performing the test. This is consistent with other ENERGY STAR products that are battery operated.
Keystone Certifications	Section 7	Auto-off Requirements		I think we should find a way to test with default “Auto-off” capability enabled and allow this energy saving function to assist in passing requirements. If the product can recover from –off and continue to test, why not?	Version 1.2 of the Imaging Equipment Test Method requires Auto-off Mode to be disabled only for TEC products with print capability. DOE believes that users would disable Auto-off to allow the unit to be woken up by network traffic without manual input from the user. If a unit is able to receive network signals and recover from a mode then it is not considered Auto-off and would not be disabled for testing. For this reason, DOE has retained the language from the Version 1.2 Test Method in the Final Test Method.

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Keystone Certifications	Section 7	Pre-conditioning		If this is necessary, for the lab's convenience, can line (231) end: "... 105 minutes, for at least 120" Does this help or hurt manufacturer ? (UUT in lab ambient prior to testing).	DOE has updated Section 7.1.A)5)a) of the Final Test Method to read: "For EP-TEC products, let the UUT sit in Off Mode for an additional 105 minutes, for a total of at least 120 minutes (2 hours)." DOE believes this modification should not increase test burden for labs, as it allows labs to take advantage of extended periods of technician downtime (e.g., overnight, during other tests) to pre-condition the unit, as opposed to requiring that testing begin immediately after the 2 hour period. DOE also believes this modification will not affect manufacturers as additional pre-conditioning time does not affect power consumption.
JBMIA	Section 7	Pre-conditioning		Current: For EP products, let the UUT sit in Off Mode for an additional 105 minutes, for a total of 120 minutes (2 hours). Proposed: For EP-TEC products, let the UUT sit in Off Mode for an additional 105 minutes, for a total of 120 minutes (2 hours).	DOE agrees with the suggestion and has updated Section 7.1.A)5)a) of the Final Test Method to read: "For EP-TEC products, let the UUT sit in Off Mode for an additional 105 minutes, for a total of at least 120 minutes (2 hours)."

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JBMIA	Section 7	Accessories		<p>Current: Accessories, such as paper source, that are intended to be installed or attached by the end-user shall be installed. Paper shall be placed in all paper sources designated to hold the paper specified for testing, and the UUT shall pull from the default paper source.</p> <p>Correct: Accessories, such as paper source, that are shipped with the base product and intended to be installed or attached by the end-user shall be installed as intended for the product model. Paper shall be placed in all paper sources designated to hold the paper specified for testing, and the UUT shall pull from the default paper source.</p> <p>Reason: The current specification may be interpreted, as if all accessories on the catalogue need be installed for testing. It should be clarified that the necessary accessory is limited to what is shipped with the base product.</p>	<p>DOE agrees with the stakeholder and has updated Section 7.1.A)1)a) of the Final Test Method to read:</p> <p>“Accessories, such as paper source, that are shipped with the base product and are intended to be installed or attached by the end-user shall be installed as intended for the product model. Paper shall be placed in all paper sources designated to hold the paper specified for testing, and the UUT shall pull from the default paper source, using the as-shipped paper source settings.”</p>

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JBMIA	Section 7	Accessories	Paper Source	Which of the paper sources is defined as 'the default paper source', in case there are multiple paper sources, e.g. cassettes, in the configuration as-shipped. Is the use of the paper source at the discretion of tester in this case?	<p>DOE has clarified in the Final Test Method that the default paper source is the paper source from which the UUT would draw when using the as-shipped paper source settings. DOE has updated Section 7.1.A)1)a) of the Final Test Method to read:</p> <p>“Accessories, such as paper source, that are shipped with the base product and are intended to be installed or attached by the end-user shall be installed as intended for the product model. Paper shall be placed in all paper sources designated to hold the paper specified for testing, and the UUT shall pull from the default paper source, using the as-shipped paper source settings.”</p>
JBMIA	Section 7	Network Requirements		When PCs other than the PC sending data to UUT are connected to network, the sleep wattage of the UUT could be influenced, i.e. increased, by SNMP packet etc sent out by non-testing PC's. How about limiting the number of connected PCs to one, i.e. the only PC sending data to UUT so that the consistency of the test should be kept.	<p>In the Final Test Method, DOE has required that only one computer may be connected to the UUT, either directly or via network, during testing. DOE has updated Section 6.1.C)1) of the Final Test Method to read:</p> <p>“1) Products shall be connected to only one network or data connection for the duration of the test.</p> <p>a) Only one computer may be connected locally to the UUT, either directly or via a network.”</p>

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Fujitsu	Section 7	Accessories		<p>The Test Method final draft states "Accessories, such as paper source , that are intended to be installed or attached by the end user shall be installed".</p> <p>Are we able to test UUT "without" accessories if the accessories have not been bundled with the product, and if the end user is required to purchase separately?</p>	<p>DOE has clarified in the Final Test Method that only accessories sold with the product shall be included in testing. DOE has updated Section 7.1.A)1)a) of the Final Test Method to read:</p> <p>“Accessories, such as paper source, that are shipped with the base product and are intended to be installed or attached by the end-user shall be installed as intended for the product model. Paper shall be placed in all paper sources designated to hold the paper specified for testing, and the UUT shall pull from the default paper source, using the as-shipped paper source settings.”</p>
Xerox	Section 8	TEC Test Method		<p>With the TEC power limits becoming more and more stringent, manufacturers may need to have products enter extremely low power modes in sleep mode to meet the limits. These extreme sleep modes may result in longer recovery times. The test requirement creates a bias against technologies that may have longer recovery times from the lowest power mode. Suggest omitting the sentence from Step 6.</p>	<p>DOE and EPA are not aware of any units that require more than 15 minutes to wake from Sleep Mode and complete a single job, as required during testing. Furthermore, any change to the Active Mode test period would require changes to the Typical Energy Consumption (TEC) Equation and additional time to appropriately adjust the TEC levels for all products. DOE and EPA welcome data on products that do require more than 15 minutes to wake from Sleep Mode and complete a single job for consideration during the next revision cycle of the ENERGY STAR Program for Imaging Equipment.</p>

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Keystone Certifications	Section 8	Measurements Values		Can time be recorded in minutes or seconds? Active times in seconds (decimal). Precision! This change would affect Table 8 & 9 "Unit of Measure" column. All recorded values should be reported with maximum resolution (significant digits), maybe specify least acceptable.	<p>The Draft Final Test Method requires that time is measured in minutes to remain consistent with the units used in the Online Product Submittal (OPS) database. As such, DOE has made no changes to the units for time measurement in the Final Test Method.</p> <p>Significant digits and rounding requirements are contained in the specification, and all comments will be addressed as part of the specification development.</p>
JBMA	Section 8	TEC Test Method	Default Delay Time	It is specified to 'Wait until --- the time specified by the manufacturer'. However, how can a tester know 'the time specified by manufacturer'? In Test Method for Determining Imaging Equipment Energy Use - Draft 2(1) note (p.15) it is stated that "DOE and EPA will clarify the reporting requirements to indicate the duration of time until the UUT has reached its final sleep or auto-off mode shall be specified by the manufacturer." Test Method for Determining Imaging Equipment Energy Use - Final Draft seems to specify nothing as to the mandatory report of the default delay time to final sleep mode. This should be specified clearly.	<p>DOE has included the following note after Tables 8 and 9 in the Final Test Method to require manufacturers to specify the time to Final Sleep if not indicated by the product:</p> <p>"Notes:</p> <ul style="list-style-type: none"> Steps 4 and 10: For those units that do not indicate when they have entered the final Sleep Mode, manufacturers shall specify the time to Final Sleep for testing purposes."

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Fujitsu	Section 9	OM Test Method	Default Delay Time Measurement	<p>Could you please specify a measuring timing for "Start" and "End" when measuring the Sleep Mode delay-time?</p> <p>(For example) When measuring the scanner with ADF, measuring timing would be from "the moment when the scanner ejects the document", or "the moment when the ADF Hopper returns to the original position"?</p> <p>Even when the ADF Hopper returns to the original position, how should we measure if the communication (e.g. data transmission) is still active with the connected PC??</p> <p>Is it correct that the measuring timing for End should be a moment when the power consumption decreases from the Ready mode to power consumption in the Sleep mode? Or when job is completed</p>	<p>DOE has included the following note after Table 10 in the Final Test Method clarifying when the Default Delay Time Measurement should begin and end:</p> <p>“Step 4 – The Default Delay Time shall be measured starting from the completion of the job until the unit enters Sleep Mode.”</p> <p>DOE does not intend to measure network activity at any stage in the test.</p>
Keystone Certifications	Section 9	Power Measurements		<p>Do you want to define “power consumption of the tested mode varies over a cycle”? Vague and left to various interpretations.</p>	<p>DOE agrees with the comment and has clarified the language of Section 9.1.A)1)c) of the Final Test Method to read:</p> <p>“If the power consumption of the tested mode is periodic, then the test duration shall contain one or more complete periods.”</p>

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JBMIA	Spec			<p>The response clarifies that "DOE has decided no specification will be made about communication over the network, beyond what is included in the Draft 2.0 test setup,--" as a reply to the suggestion "not allowing activity on OSI level 5, other than the print jobs used in TEC testing." Maybe in relation with this policy, Eligibility Criteria Draft 1 3.2.4 Wakeup specifies that "UUT shall not wake for common network traffic unless the traffic is designated for the unit to perform a user requested service." How this will be tested and qualified should be specified in the test method, where there is momentarily no such description.</p>	<p>DOE and EPA have decided to remove Section 3.2.4 in the Draft 2 Specification. As such, no changes or additions to the Final Test Method are necessary.</p>