

ENERGY STAR® Imaging Equipment Draft 2 (Version 1.0) Specification Stakeholder Comment Response Summary

Following is a summary of the feedback EPA has received from stakeholders regarding the ENERGY STAR Draft 2 (Version 1.0) specification for imaging equipment (IE). Comments are organized by specification topic, and are followed by EPA's response. These comments have been summarized and aggregated without reference to the specific individual or organization providing the feedback. In cases where stakeholders submitted supplemental materials to further support their comments, EPA has attempted to describe the general content of the materials here in a succinct manner.

On as many topics as possible, this document relays EPA decisions related to stakeholder comments/requests. There are cases where EPA is continuing to assess data or consider requests and is not yet able to relay a decision. In such instances, this document provides a list of next steps and timeline for reaching conclusion on the topic. For further information on the development of this draft specification and feedback received to date, please visit the ENERGY STAR Product Development Web site at www.energystar.gov/productdevelopment.

Partner Commitments

Labeling

Comment: EPA should not require all four types of labeling listed in the partner commitments, as they are costly. Instead, partners should be able to choose one of the four types of labeling for each product.

Comment: Labeling of the top/front of the product should be "optional" or "recommended" instead of "required."

Comment: EPA should clarify under what circumstances either permanent or temporary labeling is satisfactory to meet the labeling requirement for the top/front of the product.

Comment: EPA should not require use of the ENERGY STAR trademark at all, especially on the product itself. Partners have been successful in marketing ENERGY STAR-qualified products with or without the label. However, understanding EPA's desire to promote the ENERGY STAR brand, we recommend the following list of labeling options for partners:

1. As a permanent feature of the product's exterior, visible from the normal operating position
2. As a removable label affixed to the product's exterior, visible from the normal operating position
3. Displayed via the product operator panel during device power-up
4. Via an alternate technique, proposed by a manufacturer and agreed to by the ENERGY STAR program director.

Other possible options might include:

1. On manufacturer's ENERGY STAR-related Web pages.
2. Either in product literature or in a separate box insert.
3. On product packaging or boxes for products sold at retail.

EPA Response: EPA considers use of the ENERGY STAR mark in association with qualified products as a very important means to educate the consumer about ENERGY STAR and energy efficiency. As part of the Partnership Agreement, labeling is now

required. However, after receiving comments on Draft 1 and Draft 2, EPA has attempted to accommodate partners through increased labeling flexibility in the following areas:

- EPA has included in the Draft 2 specification that manufacturers choose either to apply a physical label to the top or front of a qualified model, or alternately, use electronic messaging that is pre-approved by EPA. Over the next few weeks, EPA will distribute examples of acceptable electronic labeling. EPA welcomes suggestions for ways in which partners would like to employ electronic messaging. In addition, EPA will allow both permanent and temporary labeling of the product. Temporary labeling includes labeling of the top or front of the product with a certification mark that can be removed by the consumer. The certification mark needs to be affixed to the top/front of the product with an adhesive or cling-type application.
- For the literature labeling requirement, as suggested by stakeholders, EPA has included in Draft 2 that manufacturers choose either to apply the ENERGY STAR mark to the product literature (e.g., user manual), or alternately, to apply the mark to a separate box insert that provides educational language about the product's energy efficiency features including its ENERGY STAR qualification.
- EPA will change the product packaging/boxes labeling requirement to "optional" for those products sold in non-retail settings and will continue to require labeling of the packaging/boxes in retail settings where the consumer will see the packaging.
- EPA will continue to require use of the ENERGY STAR mark on partners' Web sites where individual qualified products are described. EPA is in the process of developing specific guidance on using ENERGY STAR Web-based Tools, such as the certification mark. This guidance will be distributed with, or shortly following, the Draft 2 IE specification. EPA will also clarify how Web labeling requirements apply to US and non-US focused Web sites.

Comment: EPA has not clearly defined the process for pre-approving electronic labeling. Providing examples or parameters to manufacturers about what constitutes an approved electronic label would be better than a case-by-case evaluation.

EPA Response: As mentioned above, EPA will work with stakeholders to provide clarification and examples of approved labeling to avoid partner confusion and individual consideration of all electronic messaging. Stakeholders interested in offering recommendations to EPA about electronic labeling guidelines should contact Katharine Kaplan Osdoba (osdoba.katharine@epa.gov).

Comment: Some IE products do not have display screens, which limits the flexibility of product labeling to a physical label. Therefore, we recommend that EPA change the "top/front of product or electronic messaging" labeling requirement to a "recommended or encouraged item."

EPA Response: Electronic labeling has been added in an effort to increase flexibility. Although some products may not be able to take advantage of this additional option, labeling of the top/front of the product continues to be a valuable and feasible option for displaying the ENERGY STAR mark for other products. EPA will continue requiring product labeling for all products.

Comment: The requirement to update product lists annually should be changed to ensure that qualifying products are submitted before or immediately coinciding with coming to market. This is necessary to ensure that the qualified product lists reflect currently qualified products to the public.

EPA Response: Partners have an incentive to report newly-available models to ENERGY STAR as soon as possible, and EPA has found that this is the current practice. The language in the Partner Commitments is meant to require partners to review their entire

set of qualified products annually to ensure that no models should be added or removed. It is not intended to imply that new qualified products should only be submitted annually.

Additional Partner Commitments

Comment: The Performance for Special Distinction (line 82) should be completely eliminated. This should instead be included in the Partnership Agreement.

EPA Response: This language is intended to provide specific examples of activities partners may undertake to maximize the benefits of their partnership and to encourage their application for an ENERGY STAR award. It is a standard part of all products' Partner Commitments and EPA does not intend to revise the overall Partnership Agreement at this time.

Comment: In Draft 2 (line 78), there is the statement: "Notify EPA of a change in the designated responsible party or contacts for image equipment within 30 days". We are not sure about what this statement refers to. Could you please provide additional information about what the above statement is for?

EPA Response: Primary contacts for each IE partner are necessary in order to ensure that important information is being transmitted successfully and efficiently between ENERGY STAR and IE partners. This includes, but is not limited to, the unit shipment data documents that must be submitted annually by partners in order to fulfill the commitments outlined in the Partnership Agreement. Timely updates of changes in primary contacts are vital for this information to reach the appropriate contacts, which is why EPA is requesting that partners send an update about a change in designated contacts for IE products within 30 days of that change.

Definitions

Products

Comment: For products included in category F (printer), the definition seems to exclude those printers that receive information wirelessly. Furthermore, while the Operational Mode (OM) Final Draft Test Procedure explicitly references how to test "products designed to operate using batteries when not connected to the mains," printers running primarily on batteries seem to not be included in the definition. We recommend amending the definition to read "The unit must be capable of being powered from a wall unit **or by means of a battery.**"

EPA Response: It is correct that printers and other imaging equipment products running primarily on battery power are not included in the existing definition. Battery-powered products should refer to the ENERGY STAR specification for battery charging systems to determine qualification.

Comment: In the description of fax machines (line 152) "...sometimes referred to as 'convenience copying.'" is imprecise and could be deleted.

EPA Response: This clarifying comment will be deleted from Draft 3.

Marking Technologies

Comment: As one of previous Industry Meeting's action item, we have discussed the definition of Ink Jet printer speed but have yet to hear an update on this issue. EPA should define a standardized Ink Jet printer speed definition prior to setting the specification.

EPA Response: EPA is considering referencing power-supply size as an alternative to speed. EPA has requested power-supply data on currently-qualified products via spreadsheets that were sent to partners on the 23rd and 24th of February. More information on this possible approach will be communicated to industry via Draft 3, expected to be distributed on March 17, 2006.

Comment: The types of Ink Jet technologies (lines 210-211), should be listed as the “typical” types of the technology rather than the full list of Ink Jet technologies in order to not exclude other Ink Jet printer types. Otherwise, the sentence beginning “Types of IJ include...” should be eliminated

EPA Response: This request will be accommodated in Draft 3.

Operational Modes, Activities, and Power States

Comment: The last sentence of the Automatic Duplexing definition (line 233) should be eliminated. For printing products the requirement to include an automatic document feeder (ADF) as part of the duplexing functionality makes no sense.

Comment: We would like to confirm that the definition of the Automatic Duplexing mode (line 230) does not require the attachment of an ADF or other accessory on the input side.

EPA Response: EPA hoped that the example of an ADF would add clarity to the definition, but understands that it has created confusion. The request to remove this example will be accommodated in Draft 3.

Comment: Disconnect mode (line 241). There is no reference to this mode in other parts of the document and it could therefore be removed.

EPA Response: This request will be accommodated in Draft 3.

Comment: Description of off and standby modes (Line 244, 270). The standby mode and the off (including auto-off) mode are defined as two modes, while the draft test procedure describes these modes as one mode, however, adding a low-power mode and an auto-off mode. The descriptions should be consistent in the two documents as a whole. The last part of the sentence (“Standby usually occurs in Off ...”) is confusing and should be removed. The standby mode will be the mode, which is a functional level just above the off mode, e.g., with limited network functionality. The off mode could be achieved with a soft off or hard off switch.

Comment: Definitions of “Off” (244-249) and “Standby” (267-270). We feel that the definition of “Standby” in the proposed ENERGY STAR Imaging Equipment specifications should be harmonized and be consistent with the definition of “Standby” under FEMP. We see problems arising regarding the use of the same terminology that is defined differently but that relates to the same allowance EPA proposed energy usage level (i.e., 1W). The different definitions may cause confusion and lead to misinterpretations in test conditions.

EPA Response: EPA received useful feedback regarding the definitions for Off and Standby at the industry stakeholder meeting on February 14th. EPA will remove the current ambiguous references to “Standby/Off” from test procedures and specifications. EPA will also revise the definition of Standby as used in the specification, retaining the International Electrotechnical Commission (IEC) definition with an editorial comment for clarification. The Federal Energy Management Program (FEMP) currently references this IEC definition, so ENERGY STAR and FEMP will be harmonized in this regard.

Comment: Sleep mode can be reached in a variety of ways. Thus, the inclusion of “other automatically achieved ways which are related to user behavior” is recommended as an alternative to the three listed sleep options.

EPA Response: This request will be accommodated in Draft 3.

Product Size Formats

Comment: Please add (to the end of line 280): “Large-format products may be capable to print either from roll (alike continuous forms) or on sheets, or a combination of both.” or similar wording. Please note that formats are not limited to the standardized formats (A0, B, E etc), but may have custom dimensions (lengths up to 15 meters, widths of 42”, etc). There is no clear limit to these dimensions.

EPA Response: This comment will be incorporated into a revised definition in Draft 3.

Additional Terms

Comment: Base Product (lines 296-300). According to “Product Configuration” in the proposed Test Procedure, use of paper source and finishing hardware is at the manufacturer’s discretion. From this, we understand that power consumption in paper source or finishing hardware is not necessarily covered by the eligibility criteria. However, for the optional functional components and accessories, there is no clear statement concerning use in the test or no eligibility criteria. Two points should be clearly specified for the optional functional components and accessories: 1) their use in the test is at the manufacturer’s discretion; and 2) energy consumption in the optional functional components and accessories is not included in the eligibility criteria, in other words, at least base product should meet the criteria.

EPA Response: It is correct that the use of optional accessories during the test, such as paper source and finishing hardware, is at the manufacturer’s discretion. It is also correct that the Typical Electricity Consumption (TEC) test procedure is not designed to capture the energy consumed by product options such as these. Partners are required to test products with standard features installed as shipped and recommended for use, therefore equipment is only required to be installed during the test if it is a part of the standard model configuration.

Comment: DD. Digital Front-end (DFE) (line 302). The definition suggests that the DFE can be treated as optional. Please note that in many products the DFE is functionally integrated, meaning the Imaging Equipment will not function without it (at least not as a copier/printer/MFD). We propose to change the wording in the last sentence to: “A DFE allows imaging products to offer both high performance, high storage capacity and (optionally) an advanced graphical user interface to support productivity in complex customer environments.” Typical DFE functionality involves:

- network connectivity in various environments
- mailbox functionality
- queue management
- machine management
- etc.

This is what would also distinguish an above-average print controller (or embedded DFE) from an average print controller. Typical characteristics of a DFE (be it external or embedded) would be the same as for typical computers in terms of power consumption, processor clock speed and memory.

EPA Response: EPA has recently received specific, additional feedback from stakeholders on this topic, which needs to be considered carefully. EPA will distribute a revised proposal for the treatment of DFEs under TEC the week of February 27.

Comment: GG. Marking Engine (line 318). I presume a “print engine” is meant? Since this is the term mentioned in the remainder of the definition. Also it seems “Image processing” is used for two different types of processes in the definition (hard-copy output as well as computing processes?). Please explain.

EPA Response: EPA intended to use the term “marking engine” to be more inclusive to copiers. The reference to print engine will be changed to marking engine in Draft 3. In addition, EPA will take care to use the term “image processing” more precisely in Draft 3.

Comment: We support the definition of “Product Speed” in the second paragraph of Section 3 of the TEC test procedure. However, it should be included only once to avoid confusion- in either the TEC Test Procedure or in the definitions section of the Eligibility Criteria.

EPA Response: EPA will review this comment as it is preparing Draft 3 and finalizing the test procedures, and will ensure that this topic is addressed one time only.

Comment: We would like the determination of print speed to be amended as follows:

1. Print Speed, unless the product cannot perform the print function, in which case
2. Copy speed, unless the product can not perform the print or copy function, in which case
3. Scan speed, unless the product can not perform the print, copy or scan function, in which case
4. A function or operation specifically agreed to by the ENERGY STAR program director.

EPA Response: The Draft 2 specification included the portions that are not underlined above. EPA has requested more information about products that would fall under number 4, which are not capable of printing, copying, or scanning, before agreeing to incorporate this suggestion.

Comment: We would like to suggest the following to allow label printer data to be compared to A4 printers. Our suggestion is to create a checker-board (50% black and 50% white) format for printing on an A4 sheet in a standard printer and a label on a continuous form printer. A ratio of the label size to a standard size sheet of paper could be applied to the speed of the label printing to convert label print speed to A4 print speed.

EPA Response: EPA does not see a need for a standard test pattern for OM products, given the absence of an EPA-designated speed measurement procedure. EPA asks that manufacturers reference the Product Speed definition in the specification when reporting product speed.

Qualifying Products

Comment: Why are Ink Jet printers and MFDs in the same table (OM2 for standard/continuous format, OM3 for large format), while Electrophotographic (EP) products are divided into different test tables?

EPA Response: EP printers and MFDs were separated under the OM approach to allow for consistency with the TEC approach, where the submitted data supported separation. Ink Jet printers and MFDs were grouped together in the OM approach as Ink Jet MFDs are always based on printer platforms, and the functional adder concept addresses any added functionality of MFDs. EPA will revisit these groupings after stakeholders respond

to the data request sent on February 23rd and 24th to ensure the categorizations continue to be appropriate.

Energy-Efficiency Specifications for Qualifying Products

External Power Adapters

Comment: Draft 2 seems to imply that testing must be done with an ENERGY STAR qualified External Power Supply (EPS), but that the product does not have to be shipped with an ENERGY STAR qualified EPS. Is this correct?

EPA Response: IE products that use an EPS must be tested with one that can meet ENERGY STAR EPS performance criteria when tested to the ENERGY STAR EPS test method. Since the IE test methods specify that products must be tested as shipped to consumers, it is also required that an ENERGY STAR qualified IE product is shipped with an EPS that can meet ENERGY STAR levels.

Comment: Products Sold with an External Power Adapter (line 379). Please avoid forming a double standard between IT equipment and external power supplies such as AC adapters. In essence, regulations should correspond to the total consumption of a product.

Comment: We object to the requirement to have an ENERGY STAR qualified adapter sold with the IE equipment. Even if the IE product meets the new specification with an ENERGY STAR qualified EPS, if this EPS does not qualify for a later version of the ENERGY STAR EPS specification, the IE product will be disqualified as well. Some very efficient IE models will be excluded unnecessarily by this provision unless they are retested or redesigned to accommodate another ENERGY STAR EPS. The energy efficiency should be tested for the whole product rather than having individual requirements for the adapter and IE equipment.

EPA Response: EPA continues to intend that power adapters and telephony products must be capable of meeting the respective ENERGY STAR specification if they are sold with ENERGY STAR qualified imaging equipment. The power adapters and telephony products do not need to be explicitly ENERGY STAR qualified.

Digital Front-ends (DFEs)

Comment: The definition of a DFE would be more understandable if “computer-based” was added after “externally-powered” and “computer” was added after “ENERGY STAR” in line 387.

EPA Response: EPA will add “computer” after “ENERGY STAR” in line 388. The first portion of the recommendation above is unclear. Please provide an example where a DFE is not computer based and where the omission of this term would cause confusion.

Cordless Handset

Comment: The identical situation will occur with a requirement for an ENERGY STAR qualified handset as is described above for requiring an ENERGY STAR qualified external power adapter.

EPA Response: As stated above, EPA continues to intend that power adapters and telephony products must be capable of meeting the respective ENERGY STAR specification if they are sold with ENERGY STAR qualified imaging equipment. The power adapters and telephony products do not need to be explicitly ENERGY STAR qualified.

Duplexing Requirements

Comment: Because MFDs, copiers and printers are based primarily around a print engine, we would like to see more consistency between the MFD, copier, and printer duplexing requirements. There is no clear reasoning to the varying speed bands between the three IE product types.

Comment: Consistency between MFD, copier, and printer duplexing requirements could be done in one of the following two ways:

1. Instead of basing duplex requirements on speed, EPA could instead base it on the intent of the design. Individual consumers are not likely to want to pay for duplexing while businesses often accept the added initial cost. Another way to separate based on intent would be to base “recommended” and “standard” duplexing on the number of network users the device is designed to handle.
2. If using speed to segment the products, EPA should adjust auto-duplexing to the same levels for both printers and MFDs. We suggest having one categorization for monochrome printers and MFDs and another for color printers and MFDs. The current MFD duplexing rules should be amended to correspond with the current printer duplexing rules.

Comment: We believe it appropriate to include as many products handling large volume paper as possible in the products for this requirement rather than just limiting duplexing to EP products.

Comment: Duplexing for solid ink should be included, because they are typically in the same product range as EP products. Ink jet products may also be included, because ink jet products with high speed typically are in the same segment as EP products.

Comment: Duplexing should not be required for EP products that include a facsimile function. Only 7% of these products in the US include duplexing and demand for these types of personal MFDs is pushing the print speeds well above 20 ppm. Adding duplexing would increase the volume, parts, weight, and cost of these products. Instead of optional duplexing being required for these products, manual duplexing functions should be encouraged.

EPA Response: As discussed in the February 14 stakeholder meeting, EPA will attempt to obtain additional duplexing data from Buyers Laboratory to aid in consideration of these proposals. EPA will communicate the final duplexing requirements by March 1.

Comment: Digital duplicators should also be included in the duplexing rules.

EPA Response: EPA does not intend to require duplexing of digital duplicators, based on their intended function and technical capabilities.

Comment: It is assumed that it is the manufacturer’s responsibility to secure that all ENERGY STAR qualified products with duplexing as a standard feature has the duplexer installed when delivered to the customer independently of where in the supply chain the duplexer will be installed. The implication is further that the product is not offered as an ENERGY STAR qualified product without the duplexer in product catalogues etc.

EPA Response: That is correct.

Typical Electricity Consumption (TEC)

Comment: Will the descriptions in lines 413 to 418, defining how to factor DFE energy use into TEC testing, apply to OM approach also? If not, will functionally-integrated DFEs be included in the energy consumption for IJ printers under OM 2?

EPA Response: EPA's intent is to recognize higher-functionality products fairly under the specification. The request for data sent to partners on February 23 and 24 includes an attempt to learn which of the currently-qualified OM products make use of an internal DFE. EPA will analyze this data carefully and will convey a proposal for treating DFEs under the OM approach via Draft 3, expected to be distributed on March 17, 2006.

Comment: Some printers cannot perform their normal functions without a DFE. EPA should consider eliminating the description that defines a DFE as optional, and instead consider one of two alternatives:

1. Treat the printer and DFE as a combination and consider the energy consumption of both together; or
2. Consider the energy consumption of the printer alone if DFE meets the ENERGY STAR computer specification.

EPA Response: As explained in the Draft 2 specification and February 14th Discussion Guide, EPA has proposed excluding the power consumed by a physically- and functionally-integrated DFE from the overall TEC of the imaging product when considering the imaging product for eligibility under Tier I. However, EPA learned at the February stakeholder meeting that the power consumed by a physically- and functionally-integrated DFE can be measured separately from the imaging product, and thus, this power may be easily excluded from the overall TEC. Thus, EPA is now considering the possibility of employing a different approach in a Tier II of this specification than the Agency is proposing for Tier I and welcomes feedback on the above option or others.

Comment: Under the TEC approach, digital duplicators are combined in the same table with copiers, fax machines and MFDs, but the usage of duplicators is largely different from the others. A digital duplicator uses a process of stencil marking, which is suitable for duplicating a large quantity of a single image. However, other products are mostly used for producing a small number of copies from one or multiple images. They will easily meet the specification applicable to EP technology due to their different uses and technologies and would be better-encouraged to improve their efficiency if given their own separate requirement.

Comment: While EP products have fusers, digital duplicators do not. Therefore, criteria tables should be separated between EP products and digital duplicators.

EPA Response: EPA understands that digital duplicators do not operate identically to copiers or MFDs. However, as noted in the rationale that accompanied the draft TEC test procedure, dated February 2, 2005, EPA decided to include digital duplicators with copiers and MFDs under the TEC approach based on their high productivity and functional similarities and because these products consume energy at an order of magnitude lower than copiers and MFDs. Note that TEC values for digital duplicators were not included in the analysis when the specification levels for TEC Tables 1 and 2 were created. EPA is planning to reconsider the categorization of these products in a possible Tier II.

Comment: TEC Tables 1 through 4 would be clearer if they are expressed with a bracketed kWh/ipm slope multiplied by "x", as is the case in Table I of the TEC "Supplemental Rationale" Document released January 17, 2006.

EPA Response: The variable x , representing Product Speed in ipm will be added to the Tier I and II TEC formulas in the Draft 3 specification for added clarity.

Comment: Serial and Parallel products should be grouped separately. Correlation between the data of Serial and Parallel products was not found because EPA did not evaluate them based on color mode.

In a past document, EPA noted that there was little variation between the data of serial and parallel. However, we assume that it was because of the insufficient number of absolute data. Generally speaking, comparing to monochrome EP products, color EP products consume more energy per paper. Therefore, grouping Serial and Parallel in the same category may disadvantage Parallel products because of their higher color mode speed.

EPA Response: To respond to stakeholder concerns that Parallel Color EP products consume energy differently than Serial Color EP products, EPA introduced a separate job in the January 31st, February 16th, and April 15th drafts of the TEC test procedure to gauge the effect of color processing on the relative ranking of products using the TEC test procedure. EPA's decision to use only monochrome testing in the final TEC test procedure was based on the fact that the color-job test results did not significantly affect the ranking of products according to TEC. EPA supports its decision to base the TEC test procedure on monochrome imaging and plans to retain its current categorization of color EP products in the Draft 3 specification.

Comment: High-speed Ink Jet models which are heat-intensive should be considered through the TEC procedure rather than the OM procedure. These products meet the intent of the TEC approach as stated by EPA in the following quote from a document dated July 11th on the TEC procedure:

EPA Response: EPA supports categorizing products that use heat-intensive or fusing technologies under the TEC approach, even if they are Ink Jet. Language to explain this categorization is included in the final TEC test procedure and EPA will add clarification to the Draft 3 specification to specify this distinction.

Comment: Even if a copier and a MFD produce images at the same speed, they have different output volumes of copies or prints, and generally, MFDs have a greater output volume than copiers. The final TEC test procedure ignores this distinction and uses the same job table for both.

The TEC test procedure provides different job sizes for digital duplicators and fax machines, apart from copiers and MFDs, based on their different usage patterns. Additionally, in digital duplicators, the non-fuser-based printing process differs greatly from fuser-based.

EPA Response: EPA supports its decision to categorize copiers and MFDs together for eligibility in the Draft 2 specification because of operational similarities, market similarities, and test data similarities between these two products. However, EPA will consider the test data again carefully before issuing the Draft 3 specification to ensure that this decision, and the decision for categorizing digital duplicators and fax machines, is sound. EPA does not intend to change the TEC test procedure job table before finalizing the Version 1.0 specification.

Comment: Products with insufficient data, such as TT, SI, and DS should be excluded because they do not contribute to appropriate criteria establishment.

EPA Response: EPA included these technologies in the specification to ensure the specification has longevity. Although EPA did not receive any test data for these technologies when preparing the Draft 2 specification, EPA does not want to exclude manufacturers from qualifying these products in the future, once the specification is final. Since these technologies are heat-based, EPA continues to support the categorization of these products under the TEC approach.

Comment: According to the data, 52 of 164 models do not meet a 1-watt Off-mode criterion. Some data show a higher level of consumption in Off than in Auto-off. If these data are correct, we recommend the inclusion of an Off-mode criterion of 1 or 2 W.

EPA Response: Because the specification provides eligibility criteria for Standby, based on the IEC definition provided in Draft 2, EPA will consider retaining the requirements already proposed for some products, at a level of 1 watt. However, EPA is also working closely with stakeholders to determine the necessity for additional power for some types of products, possibly through the application of functional adders. The Draft 3 specification will provide clarification regarding the definition of Standby as well as revised levels in OM Tables 1 through 7. EPA continues to support its earlier decision not to require separate Standby requirements for TEC products.

Operational Mode (OM)

Comment: We would like to understand why some EP products are included in the OM tables.

EPA Response: As explained in earlier documents provided during this specification revision process, such as the Directional Draft, the TEC approach addresses all Standard-size products that use heat-intensive marking technologies. However, products that are not Standard-size, such as those defined as Large-format, Small-format, and Continuous Form, are addressed by the OM approach, regardless of marking technology. In future specification revisions, EPA will consider the energy-savings potential of classifying these non-Standard-size products under the TEC approach, but EPA does not plan to reconsider this classification prior to the release of Version 1.0.

Comment: Please confirm that for products included in the OM test procedure, the DFE must meet the ENERGY STAR computer requirements but does not have to be ENERGY STAR qualified as we understand is the case for TEC-related products.

EPA Response: It is correct that all products that use an externally-powered DFE must use one that is capable of meeting the ENERGY STAR computer specification when tested to the ENERGY STAR test method.

Following the February 14, 2006, stakeholder meeting, EPA is awaiting feedback from stakeholders regarding the feasibility of measuring physically- and functionally-integrated DFEs separately from the imaging product with which they operate. If this is the case, EPA will consider whether physically- and functionally-integrated DFEs should be treated the same way as they are under the TEC approach, where manufacturers will subtract the energy consumption of the DFE in Ready mode from the product's metered consumption in the applicable operational modes. EPA's decision will be relayed in Draft 3.

Comment: For most of the specific requirements, figures in these OM tables are TBD. We wish to know the specific requirements and figures as soon as possible that we could feedback to the EPA before the finalization and make our products meet the revised ENERGY STAR specifications.

EPA Response: The marking-engine eligibility criteria for OM Tables 1 through 7 will be based heavily on the functional-adder types and allowances that are decided for products treated by this approach. EPA will be working closely with industry stakeholders in the next few weeks, per the Action Items that were distributed following the February 14, 2006, stakeholder meeting, to finalize these criteria. These will be included in the Draft 3 specification that will be distributed on March 17, 2006.

Comment: Because of the decreasing size of the market and long product cycle for impact printers, we will be unable to make the investment to meet stringent Sleep levels.

EPA Response: EPA will consider all OM product data carefully when developing the marking-engine criteria for OM Tables 1 through 7. Any impact-printer data that has been qualified in the past as ENERGY STAR will be included in this dataset and will contribute to the specification levels for these products.

Standby

Comment: We're still not entirely sure how to interpret "standby." Is it correct that this is measured with all systems switched off by means of a mains switch, when available, but with the power cord of the marking engine plugged into the mains?

Comment: Is it correct that a DFE does not have to be included in this measurement, but that this DFE has to meet the Computer specification regarding Standby?

Comment: We would like to note that in our opinion networked printers will never reach the Standby-state, which makes this a superfluous criterion for networked printers and MFD's. Do you agree?

Comment: It is difficult for fax machines to achieve 1-watt in standby. We recommend that EPA allow for additional time to comply with this requirement.

EPA Response: EPA will be working with industry stakeholders in the coming days to collect additional data for consideration when developing Standby criteria. At present, EPA's dataset is limited with regard to this mode. EPA will convey proposed levels in the Draft 3 specification in March.

Comment: Mailing machines typically spend most of their time in a standby or off mode. We suggest the inclusion of a standby mode requirement.

EPA Response: Following discussions at the February 14, 2006, stakeholder meeting, EPA will be working with mailing machine industry stakeholders in the coming weeks to determine appropriate Standby levels for these products for inclusion in Draft 3.

TEC Testing

Comment: In the final TEC test procedure, the following statement is provided: "Typical Electricity Consumption (TEC) Test Procedure Step 6: A unit that is shipped with short default-delay times might begin Steps 6-8 from sleep." We believe that in order to ensure our customers' convenience and "ease of use" for such imaging equipment, the combination of "quick recovery and short default delay times" plays an important part. Unfortunately, EPA's latest statement does not include any provision for this issue. Therefore, the above statement would create a "loophole" allowing manufacturer to set default timer setting to minimum (hence machine goes to power management mode quickly) to improve TEC measurement data.

EPA Response: EPA does not intend to revise the language in the TEC test procedure to require specific recovery times since this revision could have the negative effect of invalidating the TEC test data that has already been submitted to EPA as well as promoting proprietary technologies that make such recovery times possible. As noted in the final TEC test procedure, EPA expects manufacturers to test their products to the TEC test procedure as these products are shipped and recommended for use. To support that products are being tested as shipped and recommended, Section 4.B in the Draft 2 specification states that partners must submit to EPA excerpts from product literature that explain these recommended default-delay settings to consumers. EPA will consider additional measures, such as possible consumer-education requirements, in

future specification revisions if the aforementioned measures are insufficient to prevent significant consumer disabling due to unusually long recovery times.

OM Testing

Comment: The OM approach should only be used as a temporary measure before addressing all products under the TEC approach. This will better facilitate the comparison of all imaging products. This could take place in a Tier II. However, it would be preferable also to get the power data for the different modes although the ENERGY STAR assessment clearly will be done on the basis of the TEC.

EPA Response: EPA originally grouped some products under the OM approach because EPA wanted the TEC test procedure to work consistently across the products that used it. Because current OM products (e.g., scanners, mailing machines) have such different usage patterns from current TEC products (e.g., copiers and MFDs), EPA has not proposed requiring them to make use of the TEC TP. In addition, EPA believes that these products use relatively little energy as a consequence of active imaging. In order to shift OM products to TEC, EPA will need to assess the energy savings that can be achieved through addressing the ready and active modes for these products and determine if doing so is a high priority. EPA would appreciate any help stakeholders can lend in securing data that allows for this assessment to be made. EPA also welcomes specific stakeholder comments on how product groups and levels should be assessed and adjusted under the OM and TEC approaches in possible future tiers of this specification.

Recovery Time

Comment: EPA is concerned with customers disabling power management modes/features. We understand that disabling such modes will create a negative impact, but we would like to remind EPA that changing the timer setting to the maximum length (240 minutes) could create similar negative impact and we strongly suggest EPA to create some sort of requirement for such practices. Changing equipment's timer setting is easily done by customer and/or service technician. Due to this reason, it is likely that we (manufacturer) will not receive any complaints for this as short default timer setting would not upset customers.

EPA Response: EPA is considering possible requirements for manufacturers to implement for setting the machine default-delay time, meaning, the maximum allowable default-time permitted by the circuitry of the imaging product that cannot be influenced by the user or vendor. EPA proposed this concept at the February 154, 2006, stakeholder meeting and will convey specific proposals in the Draft 3 specification in March. Additionally, EPA also proposed possible conventional default delay times in this same meeting, which are derived from the existing MOUs. Based on the discussions at this meeting, EPA will revise these proposed limits and include them in Draft 3 as well.

Functional Adders

Comment: As a functional-adder in the Draft 2 specification, EPA proposed "-0.5 W" as a Secondary Functional Adder Allowance (W) for PC-based systems, which cannot print/copy without being connected to a PC. Is this figure correct even if there is difference of 0.6W allowance from the Secondary Functional Adder Allowances (W) for E. Wired card/camera/storage, e.g., memory card / smart card readers, camera interfaces?

EPA Response: The -0.5 functional adder is for printers that rely on the PC's processor for most computational needs. There is not a direct relationship between the two adders and additionally, these are sleep values and not necessarily indicative of how products' power levels change in Ready or Active.

EPA will be working closely with industry stakeholders in the coming weeks to confirm whether the functional-adder allowances provided in Draft 2 are appropriate. These allowances were based on preliminary data and discussions with industry. EPA will be working closely with industry stakeholders in the next few weeks, per the Action Items that were distributed following the February 14, 2006, stakeholder meeting, to finalize the allowances for the various interfaces A through G, provided in Table 3 of Draft 2. These will be included in the Draft 3 specification that will be distributed on March 17, 2006.

Comment: We cannot find definitions or meanings of “Primary” and “Secondary” in the “Qualifying Products: Table3 – OM Functional Adders”. Also, how can we treat products with three or more functional adders?

EPA Response: Although the terms Primary and Secondary are discussed beneath Table 3 on page 13 of the Draft 2 specification, EPA provided additional clarification in its presentation at the February 14, 2006, stakeholder meeting, which is available for download on the Web at www.energystar.gov/productdevelopment. A product may have multiple functional adders, all of which are combined and added to the base making engine criteria in OM Tables 1 through 7 for consideration of eligibility. EPA will provide these marking engine criteria in Draft 3.

Comment: Describe where the numbers in the functional adder table came from and provide details about how they were derived. Also, describe whether this level of performance is actually being achieved by real, high volume, market-segmented (e.g., consumer, commercial) products in the marketplace.

Comment: Describe why some functional adders have a “primary” number and others do not.

Comment: Some functional adders we proposed for more complex products were eliminated from consideration. For example, adders for additional ink colors or an additional power allowance for higher performance formatters. These items should be reconsidered.

Comment: Some large format ink jet printers are using heater(s). A suggestion is +5W for heaters.

Comment: We request the EPA consider adding random access memory (RAM) to the list of functional adder items at 2.5W for each 256MB of memory.

Comment: We request that 0.5W (Primary) be raised to 2W (Primary) for 100Mb Ethernet and 1.5W (Primary) be raised to 4W (Primary) for 1G Ethernet.

Comment: We request at least 3W for 100Mb Ethernet.

Comment: In Table 3 the EPA suggests either a 0.4W or 0.2W allowance for fax capability. The Federal Energy Management Program rules allow 2W for fax in Standby.

Comment: The numbers in Table 3 do not appear to take into consideration the wide range of products potentially falling under the OM approach. Many standard size inkjets and all large/wide format inkjets are powerful devices with high performance. Some of the numbers in Table 3 do not recognize this. For example, the 0.5W reference for the PC-based vs. standalone product functional adder is nowhere near adequate. In our previous comments we recommended 3-5W for simpler devices and 15W for complex devices.

Comment: EPA should agree to recognize that a power range for each functional adder is warranted. One might think of this range as being from nominal numbers to minimal numbers. The nominal numbers would represent the typical performance level of real life products. The

minimal number might be considered to represent something more akin to a theoretical lower limit. With this concept in mind the EPA could use the minimal number to determine the base product energy, but then allow industry to use the nominal number in the final calculation of their product energy.

Comment: What is meant by a “PC-Based System” as it is included in the functional adders table? Does this include systems requiring a DFE?

EPA Response: EPA appreciates all of the detailed comments it received on functional adders and recognizes that this is a newer addition to the specification that will warrant significant discussion. To respond to the comments and questions above, which were received in January, EPA included detailed rationale for the Draft 2 functional adder numbers in the February 14 meeting discussion guide, distributed on February 8. It is hoped that this discussion guide answers the initial questions on how the Draft 2 functional adder limits were developed.

In the February 14 meeting, EPA agreed to circulate a list of currently-qualified products to ask manufacturers to indicate which functional adders were present when the sleep mode power was tested. Individual spreadsheets requesting data were distributed on February 24th. The spreadsheets include some additional suggestions made by stakeholders in response to Draft 2 to the functional-adder table, which were not presented in Draft 2. This data will allow EPA to analyze reported sleep mode data as well as understand the effect of functional adders on sleep mode power. EPA will circulate a revised list of functional adders for stakeholder consideration via Draft 3, which is expected to be distributed on March 17.

Comment: We believe that the Enhanced Display/Control Panels (backlit, graphic, color LCD, etc.) include the monochrome LCD panels. Could you please let us know whether our understanding is correct or not?

EPA Response: This understanding is correct; monochrome LCD panels are included.

Comment: Because of differing design structures, we ask that EPA divide OM Table 1 (lines 504-506) into four categories: large-format color copier, large-format monochrome copier large-format color MFD, and large-format monochrome MFD.

EPA Response: In order to accommodate this suggestion, EPA would need more data on these products' power consumption and functional adders, and the data would need to support separate categorization. If EPA receives additional data points in response to the data collection effort distributed on February 23rd and 24th, separation of these products will be considered. EPA will communicate its decision via Draft 3, expected to be distributed on March 17.

Test Procedures

Comment: Are the currently released TEC Test Procedure, OM Test Procedure, and Test Condition and Equipment the finalized documents?

Comment: We previously requested the EPA decide upon one paper size (A4 or Letter) for testing at 115V. The goal was to reduce the potential number of basic testing configurations from four to three. Has any progress been made on this?

Comment: Test Procedures – Section C (page 15) has a table of standard voltages. I believe that North America has standardized on 120VAC as opposed to 115VAC.

EPA Response: EPA will make minor adjustments to the test procedures and test conditions in April, once the functional adder concept is finalized. Testing at 115V will only need to occur with one paper size/weight.

Comment: For products with the same base model, it is evident each successive more highly featured product would use more energy than the previous product. In order to reduce test time to a reasonable level, we request the EPA allow successful test results of more highly featured versions to substitute for those within the same product family of lower featured versions.

EPA Response: EPA understands that this suggestion will lessen the burden on partners and supports it. EPA has also received confirmation that this suggestion is agreeable to the European Commission. The Draft 3 specification will contain detailed guidance to address this suggestion.

Comment: Add a new heading called "Products drawing power from non-mains sources." All products should comply with the eligibility criteria independent of how electrical power is supplied to the device. We offer the following language for discussion:

If a product's electrical power comes from Mains, USB, IEEE1394, Power-over-Ethernet, telephone system, any other means or any combination of means, the net electrical power consumed by the product must be used for qualification. Note that conversion efficiencies for power conversion outside of the boundaries of the product are not included.

We recognize, however, that the limited maximum power available via non-mains sources likely caps the functionality of these products versus products with similar Sleep Mode or TEC values that draw Mains power. It is not clear what would be the appropriate accommodation for this situation.

EPA Response: EPA will consider this requested clarification and will communicate any changes via Draft 3.

Units Required for Test

Comment: Heading A (line 570): Number of units required for test: Delete the text "results fall within x% of" and replace it with the following: "results are between 0.9 times and 1.0 times."

EPA Response: EPA agrees that this direction needs additional clarification and will do so in the Draft 3 specification.