To whom it may concern:

Electronics For Imaging (EFI) has been a long term stakeholder in the ENERGY STAR Imaging Equipment Specification process, and we are very satisfied with the content of the "ENERGY STAR Product Specification for Imaging Equipment, Draft 2, Version 2.0" documents. During our document review process we had numerous internal conversations and discussions with our customers; which lead to the identification of three areas within the Draft 2 document that we feel require clarification or minor changes to the Digital Front End (DFE) data reporting mechanism. The following provides details on the three areas of concern:

- **Print Driver Duplex Setting Requirement** – In order to meet Version 2.0 ENERGY STAR Imaging Equipment specification requirements, all TEC imaging equipment manufacturers with a monochrome print rate of 26 images per-minute (ipm) or greater, must have automatic duplexing. The issue for these systems which are required to contain automatic duplexing, is that there is no requirement on the imaging equipment's print driver to select duplex by default. Please note it is the print driver that ultimately determines, through its default settings and overrides, whether a job is printed duplex or simplex. Therefore if the ENERGY STAR goal is to increase the number of duplex printed jobs, which reduces the amount of paper consumed (which saves the energy required to produce that additional paper), then the ENERGY STAR Imaging Equipment specification must require the print drivers to have duplex set as default, for those systems that require automatic duplexing. In addition, the Imaging Equipment Specification should state the default simplex/duplex setting for DFE print drivers, since the DFE printer driver replaces the Imaging Equipment's driver when the DFE is connected.

- **Reporting of DFE Information** – As currently proposed, the reporting of DFE performance data is included with the ENERGY STAR Imaging Equipment submission. The issue with the proposed DFE data reporting method is that it allows for only one DFE, whereas a Digital Copier for example could contain an internal DFE and support one or more third party external DFEs. Please note that even though the external DFEs mentioned in the previous example are from third parties (e.g., EFI), they appear in the imaging equipment manufacturer's price book; which makes it convenient for the manufacturer's sales force to offer bundled packages of an imaging equipment and DFE to a customer. Please note that we have interpreted being entered into the imaging equipment manufacturer's price book as meeting the "sold in conjunction with" clause on page 4 of the Imaging Equipment Specification, which therefore makes our DFEs Type 1. If this is a misinterpretation on our part then the remainder of this bullet can be ignored, though clarification of the "sold in conjunction with" clause would need to be made to the proposed ENERGY STAR Imaging Equipment Specification to prevent future confusion. As stated in the previous example, an imaging equipment could have DFEs from multiple manufacturers, and these DFEs are not always released in conjunction with the imaging equipment's release (i.e., DFEs may be added to an imaging equipment after it receives ENERGY STAR certification). Therefore in addition to ensuring that the ENERGY STAR database can support multiple DFE entries, there needs to be a process which allows DFEs to be added to an imaging equipment database entry after it receives ENERGY STAR certification. Concerning the first part of this issue related to multiple DFE entries, I had a telephone conversation with Matt Malinowski and his initial thought was that DFEs could be treated as an accessory, since there is already a provision in the database that allows an imaging equipment to have multiple accessories (in this case multiple DFEs). Matt also implied that accessories could be added to the database after imaging equipment certification, which would deal with the second issue concerning non-synchronized

release of DFEs to imaging equipment. The final DFE performance data reporting issue relates to the actual submission of data from the certified testing labs. At present, all of the imaging equipment manufacturers which sale EFI DFEs require EFI to obtain all product certifications (e.g., UL, FCC, TUV, etc.) at our cost. This means that EFI will be responsible for selecting a certified test lab, shipping our DFEs to that lab, and paying for the tests. The issue is that the certified test lab sends the test results directly to EPA, this prevents the equipment submitter from possibly modifying the test results. So the question is how does EPA coordinate the merging of DFE data into an existing imaging equipment database entry? One possible solution for when the EPA receives a DFE test result submission, and the company that initiated the test is not the manufacturer of the targeted imaging equipment, the EPA defers processing the DFE submission until permission is received from the target imaging equipment manufacturer. Now if for some reason the imaging equipment manufacturer declines the request or fails to respond within thirty days, then the DFE manufacturer is sent a non-inclusion letter. This enables the DFE manufacturer to follow-up with the imaging equipment manufacturer to resolve the issue.

- **Graphics Processor Unit (GPU) Definition** – Within Table 2 "Maximum TEC_{DFE} Requirements for Type 1 and Type 2 DFEs" (page 8 of the Eligibility Criteria document) there exists a higher power category referred to as "Category B". The criteria for "Category B" is that the DFE has two or more physical CPUs or has a single CPU and one or more Graphic Processing Units (GPU). Through a telephone conversation with ICF International, we understand the purpose of "Category B" is to deal with the added power requirements of DFEs that drive high speed/performance imaging equipment. While EFI greatly appreciates the addition of "Category B" since it recognizes the unique qualities of the high performance DFEs that EFI manufactures, we are concerned that EPA has focused on a single technology (i.e., a GPU) for achieving this higher page generation data rate. For the past seventeen years, EFI has developed its own series of Application Specific Integrated Circuits (ASIC) that offload the CPU to generate imaging equipment marking data. Please note that a GPU according to the current ENERGY STAR Computer Specification (version 5.2) is a device with "One or more graphics processors (GPU) with a local memory controller interface and local graphics-specific memory", which covers everything from a simple VGA controller (a device no one would consider a GPU in today's computer market), to true GPUs from companies such as AMD or Nvidia, to even EFI's own ASICs if you consider "printer marking data" to be graphics. While we could broadly interpret the GPU definition to include our EFI ASICs, we are concerned that EPA could at any point retroactively change the GPU definition, which could exclude the plug-in boards that contain our ASICs. We have also noted that in the "ENERGY STAR Computer Specification Version 6.0 Draft 2" document, the GPU definition provided above is now used to describe a "Discrete Graphics Card (dGfx)", and that the GPU definition is "TBD". Another concern is that a company with older high power consuming DFE technology, which would not meet the new ENERGY STAR Imaging Equipment specification, could simply add a low cost graphics card (a card that does not participate in the generation of marking data, it simply creates a nicer Graphical User Interface) and claim the higher "Category B" power levels, which would cheapen the ENERGY STAR brand. What we propose is that instead of using the term GPU, the EPA adopt a phrase that allows for plug-in cards that actively generate/process the marking data used to create printed content, or process scan data, and not act simply as an interface to the imaging equipment (i.e., a Firewire or dedicated Gigabit Ethernet card would not qualify). And that these DFE accelerator plug-in cards can use a variety of technologies including ASICs, FPGAs, or an off-the-shelf GPU.

Regards,

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