

ENERGY STAR V3.0 Imaging Equipment Discussion Document – Comments from the European Commission

This document provides comments from the European Commission on the discussion document (supplemented with the additional information provided during the associated webinar), on the ENERGY STAR v3.0 specification development process for imaging equipment.

We support the approach taken by the US EPA in selecting the topics of specific interests for version 3.0.

Network Activity Test Method Revision

We recognise that the US EPA is investigating issues surrounding network activity under test. We agree that the test method should reflect typical use of the products which nowadays is where the imaging equipment is network connected – both when it concerns office environments and homes. The ideal test method should provide data which can be used to identify best practice in product behaviour, which includes network activity also during sleep and other low power modes.

We understand that the US EPA will investigate the potential to standardise network activity requests in order to facilitate testing of imaging equipment during network activity processes. We support this approach but would like to reiterate that it will be important to ensure repeatability of tests for a wide range of product types. It is mentioned that as part of the test method, another computer should boot up. In practice, many different types of devices with different operating systems and appliances can be part of a network and it should be ensured that the test method takes the typical use situations into account.

OM Networking allowances

The OM networking allowances in the ENERGY STAR v2.0 specification for imaging equipment should be reviewed as some are now overly generous. For example, a Wi-Fi connection is given an allowance of 2.0W in the ENERGY STAR v2.0 specification for imaging products but only around 0.5W in the ENERGY STAR v7.0 specification for displays. We would support a full review of all the networking adders applied in the ENERGY STAR

v2.0 specification ahead of any transfer over into the ENERGY STAR v3.0 specification for imaging equipment.

Paper Usage Assumption

We agree that paper usage may have reduced in general and so it may be suitable to review the N_{jobs} table. We do not have any immediate data on the relationship between product imaging speed and paper use. We would not support changes to the N_{jobs} table without a suitable amount of data being provided to inform the process.

We suggest that the paper usage as such is considered in this version and possible ways of reducing the paper consumption. This would include reviewing the Automatic Duplexing Capability and a possibility to require a default duplexing setting at delivery for products with Automatic Duplexing Capability.

Maintenance Modes

Excessive waking of imaging equipment from low power modes to perform “maintenance tasks” can clearly impact the efficiency of a product. We agree with the US EPA that it is important to consider the impact of these maintenance modes. Placing limits on their frequency, duration or energy consumption could encourage positive changes in product design. We would also support that products should be tested per their performance attributes once in use. This would include requiring consideration of maintenance modes during test.

Standby Definition and Requirement

We understand that the US EPA wishes to change the definition of “Standby” to “Lowest Power Mode”. We would suggest that the definition used to describe this mode is reflective of terminologies used in other initiatives around the globe including with existing EU Ecodesign Regulations. We would further suggest that any requirements placed on this power mode is also reflective of requirements in other initiatives such as within EU Ecodesign Regulations.

Professional Products

The US EPA proposal to remove professional products from the scope of the ENERGY STAR v3.0 specification requires further examination. Within the ENERGY STAR v2.0 specification it is stated that “EPA will consider separating these into a separate category in a future version of the specification”. We think that it is preferable to develop a separate category for these products and set requirements even if limited just to information requirements at this stage. These professional products are likely to use a considerable amount of energy during use and so purchasers are likely to be interested in pow-

er/energy data. If this data is not supplied via the ENERGY STAR programme then data from different manufacturers may not be comparable.

Wi-Fi Priority in Test Procedure

We agree that Wi-Fi connectivity in imaging equipment has become more ubiquitous since the development of the ENERGY STAR v2.0 specification. As such, we agree that Wi-Fi connectivity should be given higher priority as a connection type when configuring products for test at least for the SOHO segment (Small Offices, Home Offices). We would also like to raise the issue that disabling Wi-Fi functionality in some imaging equipment products can be a complex undertaking.

As such, the ENERGY STAR v3.0 specification should also require that manufacturers provide users with information about how to disable Wi-Fi functionality. We believe this is an important consideration for users which utilise other network connections other than Wi-Fi during operation.

3D Printers

Sales of 3D printers have grown considerably in the last few years with this increase in sales expected to increase. We think that ENERGY STAR should cover 3D printers, which are used mainly for broader purposes and e.g. not 3D industrial printers, but perhaps as a separate product group rather than within the existing imaging equipment specification.

There are some fundamental technical differences between 3D printers and imaging equipment that outputs to paper. In addition, whilst some manufacturers are key players in both the 3D printer and traditional imaging equipment market there are many manufacturers that only operate in the 3D printer market. On reflection, we think that 3D printers should be considered separately from traditional imaging equipment products.

We also think that ENERGY STAR could shape the energy performance of this new product type before inefficient design practices become the norm in the industry. As such, we would encourage the development of an ENERGY STAR specification for 3D printers in the very near term.

Excluding standalone fax machines, standalone copiers, digital duplicators, and mailing machines

We believe that the market share and total energy consumption is quite limited and we would therefore support the considerations of excluding these from the scope. It should however be based on sufficient market data.

As an example, products available in the European ENERGY STAR data base include:

- Standalone copiers: 0
- Digital Duplicators: 31 (28 of these registered at EC)
- Fax machines: 1 (registered at EC)
- Mailing machines: 36 (none registered at EC)

Proposed other Issues

There are some further issues that we think should be investigated during the development of the ENERGY STAR v3.0 specification. These include:

- **Power supply rated output adder**

The ENERGY STAR v2.0 specification includes a sleep mode power demand allowance based on the rated output of any external or internal power supply unit used with mailing machines and standard format imaging equipment (Table 8 page 15 in the ENERGY STAR v2.0 specification). This requirement causes verification issues where manufacturers rely on the rated output of internal power supplies to meet sleep mode limits. That is, to verify that an accurate internal power supply allowance has been used it is sometimes necessary to physically dismantle the product to gain access to the power supply. Attempting to verify rated power outputs of internal power supplies can result in products being damaged if no access panel to the power supply is present. We believe that this additional allowance for rated output power should be removed for internal power supplies.

- **Retesting Models after given period**

We understand that the power demands of imaging equipment can change significantly during the life of a specific model. That is, the power demands of a model first registered in the ENERGY STAR v2.0 database in April 2013 may be significantly higher than that found in the same model on sale in 2017. The opposite may happen, with new software features added or firmware updates. In the EU, if such a change happens, the product will have to be registered as a new and different product! Given that some imaging equipment models have a long life, possible changes in energy efficiency need to be considered when compiling the ENERGY STAR v3.0 specification dataset.

- **Maximum resume times**

Users may be encouraged to disable power management settings when resume times from lower power modes too long (i.e. the time from exiting a low power mode to providing output). We further understand that this issue has been addressed in the

latest Blue Angel specification for imaging equipment which includes maximum resume time requirements. The ENERGY STAR v3.0 specification should follow the example set by Blue Angel to reduce the likelihood that power management settings will be disabled by end users.

- **Consumables**

We strongly support the EPA proposal of looking more into use of refillable ink tanks.

The consumables (i.e. cartridges and containers) used during the operation of imaging equipment can have a large contribution to overall environmental impacts. We suggest that the ENERGY STAR v3.0 specification for imaging equipment addresses some of the environmental considerations associated with these consumables products. Whilst we understand that ENERGY STAR is largely limited to product energy efficiency requirements, we suggest that the existing duplex printing functionality requirements set a precedent for addressing issues beyond the energy use of the product itself. Moreover cartridges, particularly non refillable ones, involve additional "embodied energy" for their material use, more frequent need of replacement, transport and end of use treatment once disposed of, in respect to simpler (eventually refillable/reusable) tanks.

Requirements could be developed to ensure that the use of remanufactured cartridges does not result in imaging equipment refuse of working. This could be achieved by developing ENERGY STAR requirements, which stop imaging equipment from waking to inform users that non-original OEM consumables have been installed in the product or to stop products from spending time in an on state to issue these warnings. Most users that have installed non-OEM consumables in an imaging equipment model are already aware of the fact and so imaging equipment should not waste energy issuing warnings. Moreover, products refusing non OEM cartridges may involve a penalty in scores.