

# **Comments from ECESB Technical Working Group on ENERGY STAR specification for Imaging Equipment Draft 2**

## **Introduction**

The ENERGY STAR specification for imaging equipment version 1.0 draft 2 was discussed at a meeting in the ECESB Technical Working Group on 6 February 2006 at European Commission DG JRC, Ispra. The Working Group has been established under the ECESB (European Community Energy Star Board) and comprises technical experts from Member States and industry stakeholders.

This document reflects the comments provided and discussed at the meeting. Where relevant, major differences in views between Member States and the Commission services on one hand, and the industry stakeholders on the other hand are indicated in the following.

The comments will be submitted to the US EPA and will also be provided at a stakeholder meeting in Washington DC on 14 February 2006. Comments sent to the US EPA separately by the individual parties may differ from the ones presented below.

Participants in the meeting:

- Paolo Bertoldi, European Commission DG JRC
- Jan Viegand, Technical Consultant to the European Commission on the Energy Star programme
- Hans-Paul Siderius, SenterNovem, NL
- Bob Harrison, Market Transformation Programme, UK
- Catriona McAlister, Market Transformation Programme, UK
- Bernd Schäppi, EVA, A
- Milena Presutto, ENEA, I
- Roy Janssen, OCE
- Thomas Bazlen, HP
- Malcolm Hemming, Xerox
- Roy Reed, Sun

## **Summary of main comments**

- The view of the Member States is that the weekly energy (kWh) required by the digital front-ends (DFE) shall not be excluded. If there are clear technical reasons for excluding them, the DFEs should at least be able to enter a low power mode and this reduction in the DFE weekly energy requirement should be reflected in the conformance calculation. The DFE consumption values should furthermore be reported to the US EPA and the European Commission. The manufacturers do not agree in not excluding DFEs based on the view that in the markets DFEs are applied the computer associated functionality is needed, while the computers' sleep mode cannot be used because of wake-up problems on by far most customers' networks.

- The reported off mode values should be checked and if the high values reported for some of the models are correct, an off mode criterion should be added for TEC in Tier I.
- For the Tier II, the OM and TEC approaches, the product groups and the levels should be assessed and adjusted if necessary. The OM approach should eventually be substituted with the TEC approach, for example as part of Tier II.
- The definitions and use of the standby and off modes should be revised because their application is not consistent in the specification and the test procedure. For the OM approach it is assumed that the mode with the lowest consumption should be an off mode.
- Some definitions need to be more precise in order to avoid confusions and mistakes.

These comments and a number of other comments are detailed in the following.

## **Comments**

### General comment: References to US conditions

There are many references to the US and US conditions, but no references to the agreement with the European Commission and to specific EU conditions. Examples are:

- Line 70: Unit shipment data is requested to be provided for the US and non-US markets. It is in the EU's interest to have separate data for the EU market as well.
- Line 75: Only EPA has been included instead of both the EPA and the European Commission.

It is preferable to have the EU counterpart requirements and specific EU conditions mentioned in conjunction with those of the US EPA, where relevant.

### Line 52: Updating product lists

Qualifying products and product data regarding the criteria and relevant features should be added by the manufacturers to the list of qualifying products as soon as possible after they are put onto the market. It is not sufficient to update the lists with new products annually if the lists are to properly reflect the current product market to customers and stakeholders.

However, if annual updating means the updating of a conforming products list then the frequency is acceptable with the proviso (above) that data is made available as soon as each product comes to market. A clear definition of the annual update should be provided.

The data on the lists and data provided when a conforming product comes to market should be public and should be available for the EU Energy Star database immediately after it is entered into the US Energy Star database.

Use of the Online Product Submittal tool (OPS) has been required for imaging equipment but not for computers in the draft revised computer specification. Similar tool is not available for registration in EU and the European Commission recommends removing the required use of the OPS.

#### Line 152: Definition of fax machines

The description “...sometimes referred to as “convenience copying.”” is imprecise and could be deleted.

#### Line 235: Definition of duplexing

It is suggested that the last part of the sentence (“e.g. an automatic document feeder”) be removed, because it may confuse. A printer does not necessarily have a document feeder to be capable of automatic duplexing.

#### Line 241: Disconnect mode

There is no reference to this mode in other parts of the document and it could therefore be removed.

#### Line 258: Entering the sleep mode

Other modes of entering the sleep mode exist, for example a self-learning function that automatically adapts the sleep settings according to the user patterns. Another possible future way is automatically through the network when all users in a workgroup have logged off. A fourth option should be included, for example as “other automatically achieved ways which are related to the user behaviour.”

#### Line 244, 270: Description of off and standby modes

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.

#### Line 278: Large format

Large format products should include products using continuous form media (roll fed products).

#### Line 285: Size format for standard products

Some printers can use oversized media such as A3+. To be clearer about the categorisation, oversized media should be included in the definition of standard products.

#### Line 304: Definition of digital front-end

The definitions should be more stringent because as it is described now an internal (possibly integrated) controller falls under the definition, because power is drawn from the imaging equipment.

Furthermore, some imaging products cannot function without digital front-ends and the last part of the sentence should be edited in order to reflect this.

#### Line 318: Definition of marking engine

The definition of the marking engine is not clear, e.g. the controller is also part of the image processing, but normally the marking engine is understood as only the print part of the machine. Therefore the definition should be more precise.

#### Line 386: Digital front-end

The definition would be more understandable if adding “computer-based” after “externally-powered” and “computer” after “ENERGY STAR” in line 387.

#### Line 396: Duplexing

Solid ink products should be included, because they typically are 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. One manufacturer noted that line 396 and following seem to refer to TEC products exclusively, so it could be irrelevant for ink jet products, which fall under the OM approach.

The speed levels between “optional” and “standard feature” vary over the products and the basis for selecting the levels is not clear. The speed levels should be the same unless there is a technological reason for having different levels.

#### Line 406: Note regarding duplexing

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.

#### Line 409: Digital Front-End exclusion

Member States in the Working Group commented that the power consumption of the functional integrated DFE should not be excluded. In principle, all necessary equipment for a product to function should be included in the energy consumption to be evaluated. It should be the responsibility of the imaging equipment manufactures to procure digital front-ends with low consumption to comply with the criteria.

It may also be difficult to subtract consumption for the DFE in a fair manner. Furthermore, the rationale behind subtracting the consumption of the DFE’s ready mode over all the weekly hours is not clear. The DFE should preferable enter a low power mode after a certain period of inactivity. Manufacturers commented that most customers’ networks do not support waking-up DFEs, which means DFEs have to remain in idle/on even when the print engine can and will be directed to the sleep mode.

If it is decided to retain the exclusion of the DFE energy requirement, the consumption value should be reported separately in order to be able to assess its impact on the total product consumption.

#### Line 427: Energy efficiency eligibility criteria based on TEC

The reduction in the number of tables is welcomed. The division into the four tables, of which two have similar formulas, and the suggested levels however may still need to be further considered.

In addition to using the provided test data as the source for setting the groups and levels, considerations of technological change and development should have an influence.

#### Line 427: Possible supplementary off mode criterion

The Working Group previously recommended to look at the test data to see the necessity of an off mode level of e.g. maximum 1 W. Test data from EPA is now available and the data show that 52 of 164 models consume more than 1 W in the off mode. Av-

erage is 2.7 W. Seven models consume more than 10 W and the highest consumption is 98 W.

However, some of the models with high off mode consumption consume more in the off mode than in the auto-off mode and the data should be checked. If the data is correct, the Member States of the Working Group recommend the inclusion of an off mode criterion of 1 or 2 W.

#### Line 481: OM functional adders

The Working Group agrees on the use of the functional adders, but the levels selected are difficult to comment on, when the actual levels for the sleep mode are not provided.

The danger of a functional adder concept fostering complacency in power management development should be noted. A caveat is suggested “that manufacturers use their best endeavours to minimise the power requirement of additional functions when they are not required by the user”.

One manufacturer comments that the wattage numbers to add for the different functionalities are not consistent with numbers provided by the manufacturer.

#### Line 504: Energy efficiency eligibility criteria based on OM

The Member States suggest that the OM approach is only used as a temporary approach and that the TEC approach eventually will be used for all products in order to 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. Member States strongly suggest that manufacturers also should provide these data for the different modes for the Energy Star database. This is because the TEC is an average model that represents typical average office applications but not necessarily usage patterns typical for households.

According to the Member States the large format products belong naturally to the TEC methodology because many of these products are used in larger print production departments or companies, where the products seldom go into sleep and off modes. Similarly, larger inkjet printers are often an alternative to EP printers.

However, temporarily it is accepted that the OM approach will be maintained with the product types suggested. The time to sleep should be reported.

#### Line 504: The standby mode or off mode

It should be clarified if the mode is the standby mode or the off mode. It is assumed that it is the off mode.

#### Line 504: Tables

One manufacturer commented that the MFDs (table OM 1) are not in the same table as the printers (table OM 5), when the marking engine is EP. However, MFDs and printers are in the same table (table OM 3), when the marking engine is IJ. The manufacturer suggested the division of table OM 3 into two tables for MFDs and printers, respectively.

Line 519: No standby for mailing machines

Mailing machines are typically most of the time in a standby or off mode. The Working Group suggests therefore the inclusion of a standby mode requirement.

Line 563: AC power for qualification

It is agreed that the AC power provided to the product must be used for qualification. It is however often difficult to calculate the AC power provided because the conversion efficiency is not known for e.g. power-over-ethernet and the telephone system.

Line 572: Number of units for test

The formulation should be more clear so that it is not misunderstood that "...fall within 10%..." means below the criteria level and not above.

Line 572: Types of units for test

A question has been raised if all model variations of a product should be tested or if it is sufficient to test the model with the highest consumption. The Working Group believes that for many customers data on the electricity consumption are useful as part of the decision basis for procurement. Therefore, ideally all model variations should be measured and reported.

However, if a manufacturer prefers not to measure all, it is accepted that the model with highest consumption is measured and reported.

Line 637: Description of Tier II

The Member States suggest that the sentence "Tier II only applies to products ...." should be removed. Instead it should be stated that the US EPA and the European Commission will assess the approaches, the product groups and levels and adjust if necessary.

Line 639: Effective date for digital duplicators

A short period between the date of completing the specifications and the effective date is generally welcomed. However, it is not possible for the European Union to adopt the specifications for digital duplicators to become effective on 1 March 2006.