

Proposal part	Amendment/Change	Rationale	Reply to comments received
Criteria Scope	Amendment/ clarification regarding the products excluded from the scope	Clarification, agreed with stakeholders	Uptake of comments received
Criterion 1 - Availability of N-up printing.	No change	No change	No comment
Criterion 2 - Duplex printing requirement	Change of the threshold for products capable of duplex printing from 25ipm to 19ipm	<p>First draft of Energy Star v.2.0 proposed lower thresholds going down to 19ipm. Reasons that led to a later change in the second draft of Energy Star are not/less relevant for Ecolabel.</p> <p>Preliminary analysis on double side printing of the products found in the Energy Star 1.1 database discussed in last Blue Angel AHWG also demonstrates that this threshold is achievable. Ecolabel is more ambitious focusing in environmental performance than Energy labelling.</p> <p>Simple formulation is considered more practical</p> <p>Differentiation between TEC and OM classified products is not considered for necessary as it complicates the formulation.</p>	<p>Based on the LCA analysis the environmental impacts are mainly related to paper consumption. Therefore high ambition level on paper management criteria could lead to higher environmental savings.</p> <p>The proposal to align with Energy Star 1.1 requirements is not considered sufficient for EU Ecolabel.</p>
Criterion 3 - Use of recycled paper	No change	No change	No comment

<p>Criterion 4 - Energy efficiency</p>	<p>1. amendment on wording that the products should fulfil the "energy efficiency" requirements of energy star v.2.0</p> <p>2. Inclusion of Networked standby losses requirements</p>	<p>1. Environmental relevant requirements are addressed within the Ecolabel criteria.</p> <p>2. Implementing Measures (IM) for Lot 26 networked standby losses are planned and will cover also requirements on imaging equipment.</p> <p>As discussed in EUEB meeting in March 2012 no requirement on this aspect may risk that Ecolabelled products could be later banned from the market if they do not reach the IM requirements of ErP Directive and it was concluded that a proposal addressing the best performing products should be made. (Ecolabel should address the best 10-20% performing products).</p> <p>The proposed thresholds can be substantiated by data and figures included in the manufacturer input (digital Europe) for Lot 26 found in the "Background paper on printers" received October 2011.</p> <p>Ensuring coherence with other policy tools is important.</p>	<p>1. Comment was accepted</p> <p>2. The fact that the IM measures are not in force should not prevent EU Ecolabel to set requirements on this area. Moreover, energy consumption is after paper the most important key environmental area as discussed and agreed with stakeholder in 1st AHWG</p>
<p>Criterion 5 - Restriction on indoor emissions</p>	<p>Amendments/changes are made on non-identifiable VOC levels</p>	<p>Alignment with respective developments of Blue Angel criterion.</p> <p>Stakeholders agreed to follow the Blue Angel in this criterion area however without requesting limits on fine particle emission –not mature enough.</p>	<p>Comments have been made regarding the list of the identifiable VOC. The reference to the measurement method/ verification of the new Blue Angel criteria clarifies this point.</p>

<p>Criterion 6 - Noise emissions</p>	<p>Minor formulation change</p>	<p>No substantial change</p>	<p>1. Related to comments on the use of a logarithmic based formula: The use of this formula is substantiated in the background report. The investigation of high performing products substantiates the shift from the linear to a logarithmic model. Moreover, some manufacturer stakeholders agreed on the use of the logarithmic type formula but commented on the threshold proposed.</p> <p>2. Related to the proposed threshold: The proposal is considered sufficient for the ambitious level of Ecolabel as presented in the background report</p> <p>3. Related to Blue Angel criterion: The formula is supported from the experts in Blue Angel. Blue Angel plans to investigate this in the next revision</p>
--------------------------------------	---------------------------------	------------------------------	--

<p>Criterion 7 - Hazardous substances and mixtures</p>	<p>1. Change on threshold of article from 10 to 25gr</p> <p>2. Amendment regarding the derogation request of BDP</p>	<p>1. Safety data sheets are available for articles over 25 gr. The threshold of 10gr was considered less practical for implementation. Several stakeholders supported this change.</p> <p>2. The analysis made and presented in the background report regarding the derogation request of BDP (s. <a href="http://susproc.jrc.ec.europa.eu/imaging-equipment/docs/Ecolabel%20Criterion%20Derogations%20Hazardous%20Substances.pdf">http://susproc.jrc.ec.europa.eu/imaging-equipment/docs/Ecolabel%20Criterion%20Derogations%20Hazardous%20Substances.pdf</a>) is based on the technical quality BDP in which RDP is also found. However, if pure BDP is used then derogation could be proposed.</p>	<p>1. Accepted comment</p> <p>2. Accepted stakeholder input to derogate BDP under specific requirements.</p> <p>General comment: EU Ecolabel criteria development for Imaging equipment is based on EU Ecolabel Regulation 66/2010. Industry comments regarding article 6.6. and 6.7 of the Ecolabel Regulation are more generic and go beyond of this product group (are addressed to higher level in the EC and EUEB board members)</p>
<p>Criterion 8 - Substances listed in accordance with article 59(1) of Regulation (EC) No</p>	<p>No change</p>	<p>No change</p>	<p>No comment</p>

1907/2006			
Criterion 9 - Mercury in light sources	Amendment: criterion is proposed to cover all light sources instead limiting it to backlights	With this amendment the use of mercury is also restricted in scanning light sources of MFDs.  This was briefly discussed with manufacturers in AHWG in January. Several manufacture stakeholders agree on this.	Comment accepted
Criterion 10 - Plastic parts	1. Criterion point a) of 1st proposal is removed.	1. Overlap with criterion 7 & 8: The substances found in the final product which are used as plasticisers and are classified with one of the H-/R-phrases referred in criterion 7 are restricted. Moreover, many stakeholders suggest that for requirements related to the processing of materials Ecolabel is not considered the right policy tool and other legislation should be used. Many stakeholders supported it	1. Comment accepted
	2. Criterion point b) of 1st proposal was removed	2. TBPPA is mainly used in printed circuit boards. However there are not enough alternatives available. When it is used in the other parts it is covered by the current requirement on B-FR and by criterion 7. It is recommended to investigate this point in the next criteria revision.	2. Comment accepted

<sup>1</sup> See indicatively related references:

a). UNEP (2010) Technical review of the implications of recycling commercial penta and octabromodiphenyl ethers. Stockholm (UNEP/POPS/POPRC.6/2) and Annex (UNEP/POPS/POPRC.6/INF/6) October 2010. b). Shaw SD, Blum A, Weber R, Kannan K, Rich D, Lucas D, Koshland CP, Dobraca D, Hanson S, Birnbaum LS. (2010) *Reviews on Environmental Health* 25(4): 261-305.

<sup>2</sup> Weber R, Watson A, Forter M, Oliaei F. (2011) *Waste Management & Research* 29 (1) 107-121

<sup>3</sup> Recast of Directive 2002/96/EC on waste electrical and electronic equipment (WEEE) is currently ongoing but there is no change regarding the provision for brominated flame retardants s. <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2012-0009+0+DOC+XML+V0//EN>

<sup>4</sup> See indicatively related references:

a) Waaijers SL, Kong D, Hendriks HS, de Wit CA, Cousins IT, Westerink RHS, Leonards PEG, Kraak MHS, Admiraal W, de Voogt P, Parsons JR. (2012). *Reviews of Environmental Contamination and Toxicology* 222 (accepted). b). German Environmental Agency (UBA) (2008) *Brominated Flame Retardants: Guardian angels with a bad streak?* 04/2008. c). Arcadis, EBRC (2011) *Identification and evaluation of data on flame retardants in consumer products – Final report 3|402 for European Commission Health and Consumers DG. Contract number 17.020200/09/549040.11.*

	<p>3. Criterion point c) of 1st proposal was removed</p>	<p>3. In this requirement a restriction in the use of PVC was proposed. Despite the environmental concerns related to the end-of-life of PVC material this was taken out because: a) PVC is mainly used in cables. However the use of PVC free cables is very limited –therefore a restriction is not proposed. b) Based on manufacturer feedback it could not be verified that significant percentage of PVC is used in the plastic parts other than cables of imaging equipment. Therefore, the environmental savings are considered to be low</p>	<p>3. Comment accepted</p>
	<p>4. Criterion point d) of 1st proposal was removed</p>	<p>4. Biocidal products are not used in imaging equipment. Manufacturer confirmed this in AHWG. Stakeholders agreed on this.</p>	<p>4. Comment accepted</p>
	<p>5. Amendment on 1<sup>st</sup> proposal of criterion point e)</p>	<p>5. Formulation is improved based on stakeholder feedback. Further the applicability of the criterion is limited to external plastic casings and to the recommended for use cartridges. In that way main post consumption plastic waste stream in the imaging product life cycle is captured (external plastic casings cover ap.70 % of overall plastics used in IE). The reasons for the restriction on brominated aromatic flame retardants are related to their negative impacts and potential human and environmental risks in the end-of life of the products.</p> <p>An analysis of different end-of-life scenarios and the associated problems follows: 1. Incineration of plastics containing aromatic brominated flame retardants: A large proportion of brominated flame retarded materials are combusted. Depending on the quality of combustion, high levels of brominated dioxins and furans can be formed and released as a result of the dioxin precursor properties of aromatic brominated flame retardants. In particular, open burning of e-waste is estimated to globally generate polybrominated and polyhalogenated dibenzo-p-dioxins and dibenzofurans (PBDD/PBDFs and PXDD/PXDFs) on a scale of tonnes and for many geographical areas can be considered as common practice<sup>1</sup>. While brominated flame retardants in plastics can be destroyed with high efficiency if the plastics are treated in incinerators constructed and operating with best available techniques (BAT) and according to best environmental practices (BEP). However, in this case the costs per tonne of incinerated material</p>	<p>5. Comment on formulation and on excluding plastic used in electronic and internal parts is accepted.</p> <p>Comment on removing the whole requirement is not accepted.</p> <p>The presented evidence (s. footnotes and next column) shows the environmental concerns related to the use of Br- FR (recyclability of the product is also hindered/reduced).</p>

are considered high (in the order of EURO 80/t).

2. Disposal of plastics containing aromatic brominated flame retardants at landfills

Additionally, a large portion of BFR-treated products end-up in landfills and there is growing evidence and concern that brominated flame retardants including POPs/PBDEs are leaching from landfills and contaminating the environment in industrial countries as well as in developing/transition countries<sup>1,2,6</sup>. Only in engineered landfills with bottom liners, leachates that escape to the environment can be collected and treated to reduce the flow of contaminants to ground and surface water for some time but such treatments are expensive and not state-of-the art. Because of their persistence, POPs/PBDEs will remain in landfills for decades and probably centuries and are expected to be eventually released to the environment as the landfill engineering systems (basal/capping liners, gas/leachate collection systems) will inevitably degrade and lose their ability to contain the contaminants. Therefore, landfilling does not appear to be a sustainable solution for long-term containment of BFR-treated materials<sup>1, 2</sup>.

3. Recycling of plastics containing aromatic brominated flame retardants

Plastic containing brominated aromatic substances has a negative influence on the recycling of imaging equipment as the plastic fraction containing BFRs needs to be removed from any separately collected WEEE and disposed of or recovered with specific requirements based on the provisions of Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)<sup>3</sup>.

The challenges which arise with regard to reuse and recycling of polymers from imaging equipment were highlighted and discussed along the criteria development process. It has been analysed whether a proposal of requiring a minimum of total 10% of reused and/or recycled polymers used in manufacturing of the imaging equipment products, which should be the frontrunners from the environmental point of view, is feasible. It has been identified that reuse is not a common practise yet, despite the fact that there are companies operating e.g. in Japan which have managed for certain models marketed business-to-business to achieve up to 80% of reuse rate<sup>11</sup>. In the framework of analysis conducted it has been seen that, although imaging equipment manufacturers emphasize that recycling is considered a desirable approach but that the proposed 10% threshold is currently high. Further, leading manufacturers in the sector of electronic equipment highlighted in this respect that plastic containing brominated

		<p>flame retardants are currently not recycled back to be used again in imaging equipment products, mainly due to RoHS regulation and the presence of restricted PBDEs in WEEE polymers. A member of the Bromine Science and Environmental Forum (BSEF) mentioned that from technical perspective BFR-containing plastics can be recycled. Nevertheless, the common praxis is that currently WEEE polymers and in particular bromine containing polymers are often down-cycled partly in sensitive uses e.g. toys<sup>1</sup>.</p> <p>The above given reasoning underlines the critical aspects of using brominated flame retardants in imaging equipment products which should be ecolabelled. These products should be frontrunners in their markets and should contribute to more sustainable consumption, reducing the environmental impacts of this product group along the life cycle, i.e. also in the end-of-life phase. Furthermore the technical need to use brominated aromatic additives used as flame retardants in plastics can be questioned, as alternative materials and substitutes, which have lower health and environmental concerns, are available<sup>4</sup>.</p>	
Criterion 11 - Design for disassembly	No change	No change	Harmonised with Blue Angel criterion
Criterion 12 – Recycled and reused content	Change on formulation	<p>Formulation is changed and now is similar to the one used in US Epeat scheme.</p> <p>The overall aim of this criterion remains. This change was also proposed from stakeholders.</p> <p>Manufacturer proposed a threshold of 5% which is considered very low. Many MS stakeholders supported the initial criterion formulation (threshold of 10%).</p> <p>Moreover, the criterion as formulated includes in the calculation of the 10 % also reused items/parts, giving incentive to manufacturers for reuse practises. Reuse is positioned higher in the waste management hierarchy than recycling and is considered to reach higher environmental savings.</p>	<p>Comment to use similar formulation with US Epeat scheme was accepted</p> <p>Comment to set the threshold lower is not accepted.</p>

Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges	Change on formulation	<p>Comments and discussion with stakeholders were taken into account. The aim of the criterion addresses the importance of designing the cartridges in order to facilitate their reuse.</p> <p>Recycling of cartridges is the second best option after reuse. However, including in the criterion wording the term "reuse and recycling" would not give incentive and highlight the priority for reuse.</p>	Input from stakeholders was taken into account and new formulation is proposed
Criterion 14 - Toner and/or ink cartridge take-back requirement	<p>Amendment on formulation.</p> <p>Change "ensure of the return" with "offer a take-back system"</p>	Amendment on formulation was made as it reflects the aim of the criterion and improves clarity of the criterion.	Comment accepted
Criterion 15 - Substances in ink and toners	No change	No change	No comment
Criterion 16 - Requirements on packaging	No change	No change	This criterion is similar as included in EU Ecolabel for similar product groups. Numerous stakeholders support it
Criterion 17 - Warranty, guarantee of repairs and supply of spare parts	Minor amendment	<p>Industry stakeholder proposed to add an exemption if manufacturers temporarily cannot comply due to reasons beyond their control e.g. natural disaster.</p> <p>Comment was accepted.</p>	The time period for the warranty and guarantee is proposed based on the life time period of the product.

<p>Criterion 18 - User Information</p>	<p>Change on criterion. Part (d) was removed</p> <p>Part (e) was changed and replaced with an information requirement as used in GPP criteria</p> <p>Minor amendments on formulation</p>	<p>Part d) was removed as suggested by stakeholders.</p> <p>Part c) remains.</p> <p>Part b). Paper consumption is the most important parameter regarding the environmental performance of imaging equipment. Therefore the user should be informed on the performance of the product regarding misprints. The measurement method is straightforward and rather simple. Suggested amendments for clarity on the measurement are made. In the current form only information is asked and no comparison or minimum threshold is requested.</p> <p>Previous part e) was changed accepting suggestions from stakeholders and changes made in criterion 13. Moreover, information on the yield of the cartridge was added as this supports the user to make better choices.</p> <p>In part (e) now is given the information clause used in GPP criteria.</p>	<p>Comments were taken into account and some parts were respectively modified.</p>
<p>Criterion 19 - Information appearing on the Ecolabel</p>	<p>No change</p>	<p>No change</p>	<p>No comment</p>
<p>Criterion 20– Social accountabili ty</p>	<p>No change</p>	<p>No change</p> <p>Regarding limiting the criterion on compliance only to the "ILO core conventions" this was not clear if it is shared among CBs and Members of EUEB. Clarification on this can be provided later by the EUEB board and the respective EUEB horizontal task force on "social criteria" which can then lead to a respective change on the criterion formulation.</p>	<p>No comment</p>