

Annex 1
Of DT_ECO-06/2009

STUDY FOR THE COPYING AND GRAPHIC PAPER CRITERIA REVISION



Final Background Report

VERSION 21st December 2009

“Revision of EU Ecolabel criteria for the copying and graphic paper product group”

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We also want to thank all the stakeholders, the Competent Bodies and the Industries that have actively participated and fruituously collaborated to the project for the revision of the EU Ecolabel Criteria for Copying and Graphic paper .

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1 Introduction

ISPRA, the Italian Agency for Environmental Protection and Technical Services, the technical support for the Italian C.B., has been entrusted by the European Commission for the development of the project entitled “**EU Ecolabel Criteria Revision for Copying and Graphic Paper**”.

ISPRA appointed Life Cycle Engineering (LCE) to act as technical support during the project development. The overall aim of the project was to assess the need for updating/developing new criteria for the Copying and Graphic paper product group (PG) and, subsequently, to proceed with the revision of the current criteria. The project is composed by 2 Work Packages (WPs).

WP1 focused on the development of a Preliminary Report for the revision of the existing Copying and Graphic paper criteria. The **Work Package 1 Preliminary Report** constituted an informative platform for the whole project. This Preliminary Report aimed at:

1. Updating some basic market data, to highlight the share of the products belonging to this PG in the European market and the feasibility of Ecolabelled papers.
2. Defining the available technologies and production methods, to assess if the existing criteria have been overcome by technological improvements, and if some new requirements need to be tightened.
3. Analysing the existing EU and some specific national legislations as well as BAT documents influencing the Copying and Graphic paper sector, to assess if new mandatory requirements have been introduced, and if the criteria are, at least, as strict as the current legislation is.

WP2: based on WP1 results, the **Work Package 2** consists in the revision of the existing criteria for the award of the Ecolabel flower for the copying and graphic paper product group. Work Package 2 is composed by 2 tasks:

Task1

The aim of this activity is the revision of the Commission Decision 2002/741/CE criteria for the Copying and Graphic Paper product group. All the comments and proposals emerged from the WP1 Final Report have been included in the 1st Background Document, which was used as technical support to the 1st Draft Criteria Proposal that was illustrated during the 2nd AHWG (27th March 2009). The 2nd Background Document and the 2nd Draft Criteria Proposal contains the issues that were raised during the 2nd AHWG meeting together with the comments received after.

These documents, have been updated with comments received during the 23rd September 2009 EUEB and with written comments collected before 9th October 2009. These updates constitute the base of discussion for the 3rd AHWG (5th November 2009, Bruxelles).

Task 2

The 3rd Criteria Proposal with the relative 3rd background document will contain the decisions which will be taken during the 3rd AHWG meeting and will be discussed at the December EUEB. The Final Report, containing outcomes of the EUEB and the conclusions of the whole WP2, and the Final Criteria Proposal, including the revision of the criteria for the Copying and Graphic Paper product group, will be the main outcome of this task and will be distributed 21st December. The

Final Draft Criteria Proposal will be then presented to the first EUEB of the 2010 and hopefully voted by the Regulatory Committee. After the approval of the criteria proposal the Eco-label User's manual for the applicant will be prepared.

Table 1.1 - Work Package 2 actions and timetable

TASK	ACTION	WHO	DEADLINE	Deliverables	Status
1	1 st Background document delivery 1 st Draft Criteria Proposal delivery	ISPRA/LCE	13 March 2009	1 st Background document 1 st Draft Criteria Proposal	OK
	2nd AHWG meeting	ISPRA/LCE	27 March 2009	1 st Background document 1 st Draft Criteria Proposal PPT presentation	OK
	Minutes of the 2 nd AHWG	ISPRA/LCE	within 2 weeks	Minutes	OK
	Management of AHWG comments	ISPRA/LCE	April -June 2009		OK
	2 nd Background document delivery 2 nd Draft Criteria Proposal delivery	ISPRA/LCE	July 2009	2 nd Background document 2 nd Draft Criteria Proposal	OK
	Management of comments	ISPRA/LCE	July-September 2009		OK
	Presentation of the draft Criteria Proposal at the EUEB meeting	ISPRA/LCE	23 September 2009	2 nd Background document 2 nd Draft Criteria Proposal	OK
	Management of comments	ISPRA/LCE	September-October 2009		OK
2	2 nd Background document "EUEB revised" 2 nd Draft Criteria Proposal "EUEB revised"	ISPRA/LCE	October 2009	2 nd Background document 2 nd Draft Criteria Proposal	OK
	3rd AHWG meeting	ISPRA/LCE	5 November 2009	2 nd Background document revised with comments 2 nd Draft Criteria Proposal revised with comments	OK
	Minutes of the 3 rd AHWG	ISPRA/LCE	within 2 weeks	Minutes	OK
	Management of AHWG comments	ISPRA/LCE	November 2009		OK
	3 rd Background document delivery 3 rd Draft Criteria Proposal delivery	ISPRA/LCE	26 th November 2009	3 rd Background document 3 rd Draft Criteria Proposal	OK
	Presentation of the 3 rd draft Criteria at the EUEB meeting	ISPRA/LCE	9 December 2009	3 rd Background document 3 rd Draft Criteria Proposal	OK
	Management of comments raised at the EUEB	ISPRA/LCE	21 December 2009		OK
	Final Background document delivery Final Criteria Proposal delivery	ISPRA/LCE	21 December 2009	Final Background document Final Criteria Proposal	OK
	Presentation of the Final Criteria at the EUEB meeting, and vote at the R.C.	ISPRA	1 st meeting of 2010	Final Background document Final Criteria Proposal	NEXT
	User Manual for applicants and CBs	ISPRA	2010	User Manual	NEXT

1.1 COPYING AND GRAPHIC PAPER - CLASSES DEFINITIONS

For the aim of the study, the CEPI - Confederation of European Paper Industries – proposal for graphic paper definition is adopted, as the following scheme shows (Table 1.2).

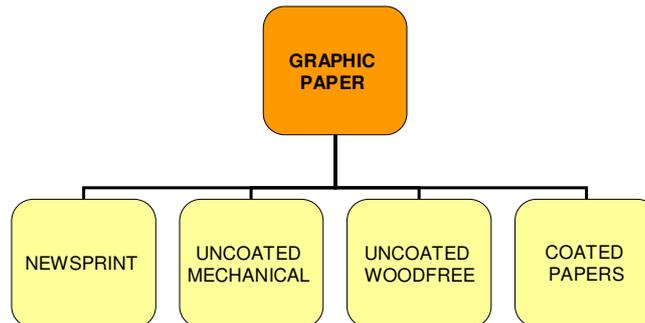


Table 1.2– “Graphic Paper “classes definitions by CEPI (Source: CEPI)

NEWSPRINT	Paper mainly used for printing newspapers. It is made largely from mechanical pulp and/or recovered paper, with or without a small amount of filler. Weights usually range from 40 to 52g/m ² but can be as high as 65g/m ² . Newsprint is machine finished or slightly calendered, white or slightly coloured and is used in reels for letterpress, offset or flexo-printing.
UNCOATED MECHANICAL	Paper suitable for printing or other graphic purposes where less than 90% of the fibre furnish consists of chemical pulp fibres. This grade is also known as groundwood or wood-containing paper and magazine paper, such as heavily filled super-calendered paper for consumer magazines printed by the rotogravure and offset methods.
UNCOATED WOODFREE	Paper suitable for printing or other graphic purposes, where at least 90% of the fibre furnish consists of chemical pulp fibres. Uncoated woodfree paper can be made from a variety of furnishes, with variable levels of mineral filler and a range of finishing processes such as sizing, calendering, machine-glazing and watermarking. This grade includes most office papers, such as business forms, copier, computer, stationery and book papers. Pigmented and size press “coated ” papers (coating less than 5g per side) are covered by this heading.
COATED PAPERS	All paper suitable for printing or other graphic purposes and coated on one or both sides with minerals such as china clay (kaolin), calcium carbonate, etc. Coating may be by a variety of methods, both on-machine and off-machine, and may be supplemented by super-calendering.

Current criteria for “copying and graphic paper” (Commission Decision 2002/741/EC) exclude “newsprint paper” explicitly from the product group. The inclusion of the *newsprint paper* in the EU Ecolabel criteria for “printed paper products” (criteria currently *in interservice consultation within the European Commission*) has been evaluated and excluded also from the scope of this new product

group (see below). Therefore, at the moment, newsprint and magazine paper couldn't be awarded with the EU Ecolabel.

2 Technical analysis of existing criteria

This Chapter focuses on Pulp and Paper production processes to highlight how the existing criteria have been developed and to open the discussion about their revision. In particular, this section summarizes the analysis of the existing technical references for the management of the environmental aspects within the European pulp and paper industries (BREF, 2001).

By the way, a revision of this BREF document has just re-started in 2009 but, unfortunately, at the moment, no draft documents are still available for consultation; the revision process it is expected not to finish before December 2010 (at least) and a first draft document should probably be sent not earlier than by the end of 2009¹.

2.1 MAIN ENVIRONMENTAL ASPECTS LINKED TO THE PAPER PRODUCTION

The paper industry requires natural and chemical raw materials: cellulose, water and additives (e.g. for the graphic paper, the production process needs adhesive agents as resins, fillers, etc...). Production processes need energy for paper dehydration, paper drying and fibres processing. The different processes cause emissions to air and water, mainly SO_x, NO_x, AOX and organic compounds. The residual de-inking, the sludge depuration and the residuals chemical agents are probably the most important production waste to manage.

No significant technical changes occurred in the production process since the last criteria revision, as also CEPI¹ and ASSOCARTA² consulted documentation has demonstrated.

2.2 CURRENT ÉCOLABEL CRITERIA

The current scheme of the criteria for copying and graphic paper is structured in 8 main criteria dealing with the following life cycle phases: raw materials, production process and use phase (Figure 2.1).

¹ Infos received from Mr Michael Suhr (European IPPC Bureau) new coordinator of the 2009 Bref Revision

¹ CEPI, 2006 and website www.cepi.org

² ASSOCARTA, 2007 and website www.assocarta.it

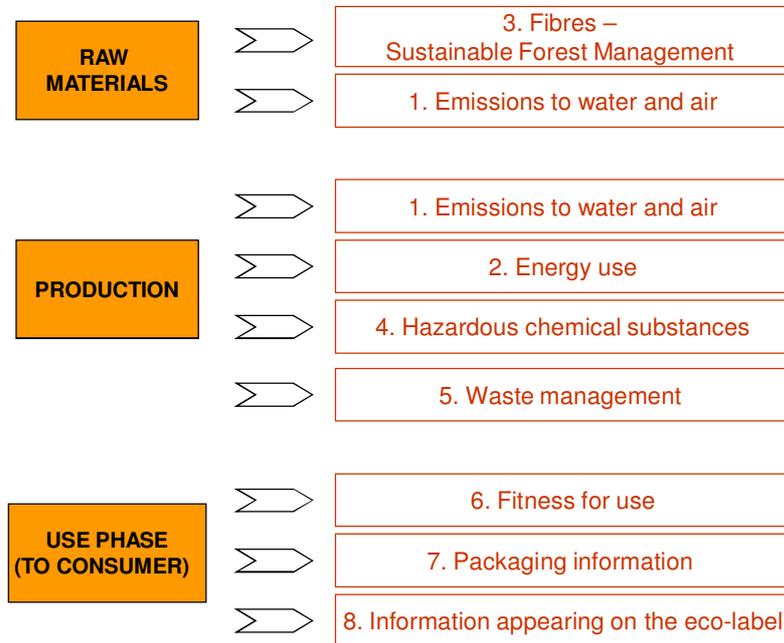


Figure 2.1 – Structure of the current Ecolabel criteria.

2.3 THE IPPC DIRECTIVE

The purpose of the IPPC (Directive 96/61/CE) is to achieve integrated prevention and control of pollution arising from the activities listed in its Annex I. The IPPC establishes a common set of rules for the release of the permits to industrial installations in Europe with the aim to promote the integrated pollution prevention and control.

Industrial plants for the production of:

(a) *pulp from timber or other fibrous materials;*

(b) *paper and board with a production capacity exceeding 20 tonnes per day,*

are included, as specified at the point 6.1 of the Annex I of the Directive.

Therefore, the European paper and pulp producers are subject to the IPPC directive rules and, in particular, they have to refer to the BREF, the Reference Document on Best Available Techniques (BAT), in order to reduce the environmental impacts associated to their productive processes.

2.4 BEST AVAILABLE TECHNIQUES (BAT) ANALYSIS

The term “best available techniques” is defined in Article 2(11) of the Directive as “*the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole.*”

The BREF document sets which range of emissions levels is expected from the use of best available techniques, and **shall not be considered as limits**.

The latest Reference Document on Best Available Techniques in the Pulp and Paper Industry dates back to 2001 and it is the same used in the development of the former criteria for this product group³.

The analysis highlights a close relationship between the resources/energy consumption and emission values reported in the BAT document and the Ecolabel criteria, as shown in the following chapter.

It has to be highlighted that mechanical pulping and also recycled fibre pulping is in most cases integrated to the paper mill. Therefore, BAT is given for integrated “pulp and paper mills” (except for CTMP). That means that there is no BAT for recycled fibers only, but for integrated pulp and paper production.

The Ecolabel reference values are provided, instead, also for the recycled pulp production as it is a separate process. The direct comparison of BAT values and EU ecolabel criteria is often not possible.

Emissions to air and water

The following tables (Table 2.2 and 2.3) refer to the emissions levels associated to the pulp and paper production process.

Table 2.2 shows the range of values for air and water emissions established by the BAT compared with the reference values imposed by the current Ecolabel criteria, expressed in Kg/tonne of product (pulp or paper, depending on the process considered).

When a correspondence between the BAT and the Ecolabel values exists, the Ecolabel always respects the range established by the Best Available Techniques.

The table takes into consideration also the BAT limits for the Phosphorus (Total P) emission to water, also if in the current Ecolabel criteria it is not still considered.

The phosphorus is an indicator of the potential eutrophication for the water ecosystems. The environmental relevance of the phosphorus could be considered for the criteria revision, as already done for the new “Tissue paper” Ecolabel Criteria Revision (2009/568/EC). In accordance with the

³ Note: the BREF and BAT document revision has just been undertaken in early 2009 and it will surely not come to an end before the end of 2010 or the beginning of 2011.

limits imposed for the other above-mentioned parameters, the reference values for the phosphorus should be included in the BAT ranges shown in the table below.

Since the reference document has not changed from the last revision of the Ecolabel Criteria for Copying and Graphic paper, the process and the existing limits still respect the BAT ranges. About this issue, it could be taken into account also the technical analysis results (treated in previous paragraph) about the technological developments occurred to assess the possibility of either a further lowering of the reference values or leaving them unchanged.

Table 2.1 - Air and water emissions levels related to pulp and paper production (Source: BREF, 2001)

EMISSIONS (kg/ADT)			Water		Air			Water (New Proposal)	
			COD		S		NO _x	Total P	
			BAT	Current Criteria	BAT	Current Criteria	BAT	Current Criteria	BAT
PULP	CHEMICAL (kraft-sulphate)	Bleached	8,0 -23	18,0	0,2-0,4	0,6	1,0-1,5	1,6	0,01-0,03
		Unbleached	5,0 - 10						0,01-0,02
	CHEMICAL (sulphite)	Bleached and unbleached	20 - 30	25,0	0,5-1,0	0,6	1,0-2,0	1,6	0,02-0,05
	MECHANICAL (CTMP)	n.a.	10,0 - 20	15,0	n.d.	0,2	n.d.	0,3	0,005-0,01
	RECYCLED FIBRES ⁷	n.a.	n.d.	2,0	n.d.	0,2	n.d.	0,3	n.d.
PAPER	NON INTEGRATED PAPER MILLS	Uncoated fine paper	0,5 - 2	1,0	n.d.	0,3	n.d.	0,8	0,003- 0,01
		Coated fine paper	0,5 - 1,5						
	OTHER PAPER MILLS		n.d.	1,0	n.d.	0,3	n.d.	0,7	n.d.
	RCF PAPER MILL ⁴ (with deinking)		2,0 - 4,0	-	n.d.	-	n.d.	-	0,005-0,01

Table 2.2 shows the AOX emission levels: in the current criteria, the hurdle values for AOX just refer to pulp production while, in the BREF document, the AOX emissions levels refer also to the paper production.

In the current criteria the hurdle is 0,25 Kg/ADT for each pulp used, while in the BAT the value depends on the kind of pulp (sulphate bleached or recycled).

⁴ Most of the recycled pulping are integrated: therefore the emission levels associated to recycled paper are given for integrated pulp and paper mills. (RCF= recycled fibre)

Table 2.2- AOX emission levels related to pulp production (Source: BREF, 2001)

EMISSIONS (kg/ADT)		AOX Kg/ADT	
		BAT	Current Criteria
PULP	CHEMICAL (sulphate bleached)	< 0,25	0,25
	PAPER		
	NON INTEGRATED PAPER MILLS	< 0,005	-
	INTEGRATED PAPER MILLS		
	from mechanical pulp	< 0,01	
	RCF	< 0,005	

Energy Use

About the energy consumption, the BAT document sets the range reference values for fuel and electricity use. Table 2.3 refers to the **pulp** production and Table 2.4 to the **paper** production.

As Table 2.3 shows, the Ecolabel criteria reference values always comply with the ranges imposed by the BAT. Furthermore, the recycled fibres reference value for the electricity use is lower than the BAT minimum hurdle.

Referring to the fuel limits for the chemical pulp, in the BAT there are different ranges for sulphate and sulphite grades, while in the current criteria there is just a medium value for both of them (4.000 kWh/ADT).

Table 2.3- Energy consumption levels for pulp production (Source: BREF, 2001)

ENERGY USE			FUEL (kWh/ADT)		ELECTRICITY (kWh/ADT)			
			BAT	Current Criteria	BAT	Current Criteria		
PULP	CHEMICAL	Sulphate	2.770	3.878	4.000	600	800	800
		Sulphite	4.432	4.986		600	800	
	MECHANICAL	n.a.	277	1.662	900	1.900	2.600	2.500
	RECYCLED FIBERS	n.a.	n.d.		1.800	n.d.		800

Considering paper production, the BAT limits concern both the integrated and non integrated paper mills, while the current Ecolabel criteria impose reference values to non integrated paper mills only, as the Table 2.4 highlights.

Therefore, for the calculation of their energy consumption, the integrated paper mills have to refer to both “pulp” and “non integrated paper mills” BAT values, like if they were 2 separate processes (Table 2.3 and Table 2.4).

The current Ecolabel reference values are in accordance with the BAT ranges and for the non integrated paper mills the fuel use values are even lower than the BAT minimum hurdles, as the Table 2.4 shows.

Table 2.4 – Energy consumption levels for paper production (Source: BREF, 2001)

ENERGY USE				FUEL (kWh/ADT)			ELECTRICITY (kWh/ADT)		
				BAT		Current Criteria	BAT		Current Criteria
PAPER	INTEGRATED PAPER MILLS	CHEMICAL sulphate	bleached	3.878	5.540	-	1.200	1.500	-
			unbleached	3.878	4.848	-	1.000	1.300	-
		CHEMICAL sulphite	bleached	4.986	6.648	-	1.200	1.500	-
			coated	831	3.324	-	1.700	2.600	-
		MECHANICAL pulp	printing	277	1.662	-	1.700	2.600	-
			RECYCLED FIBRES	-	n.d.		1.800	n.d.	
	NON INTEGRATED PAPER MILLS	uncoated	1.939	2.078	1.800	600	700	600	
		coated	1.939	2.216	1.800	700	900	800	
	RCF PAPER MILL	deinked	1.108	1.801	-	1.000	1.500	-	

Notes on the technical analysis

The argumentation made in the previous paragraph demonstrates that, at the moment, it seems necessary to consider also the technical analysis results on the current technological developments in order to evaluate the necessity of changing the reference values for the “emission to air and water” and for the “energy use” in the new Criteria for Copying and Graphic Paper. The reference document on which the current criteria are based on, in fact, has not been changed since the last criteria revision process.

On the other hand, as said before, it has to be considered that an updated version of the BREF for the Pulp and Paper Industry might be soon available (the BREF revision started in January 2009), so if this new document is published before the end of the current criteria review, a new update of the abovementioned values will be necessary.

Moreover, it has to be highlighted that, as shown in the analysis, the Ecolabel reference values represent a “simplification” of those reported in the BAT: for this, in some cases, some modification could be made to the existing criteria, and the introduction of a limit to the Phosphorus emissions to water (not considered until now) could also be included.

2.5 SUSTAINABLE FOREST MANAGEMENT

In the wake of the UN Conference on Sustainable Development in 1992 (Rio Summit), concerned business representatives, social groups and environmental organizations moved on with the purpose to improve forest management worldwide. This is why different Organizations were born with the intent of providing internationally recognized principles, rules and standards to assure a socially and environmentally correct forestry management.

Subsequently these schemes have extended their aims also to the wooden products certification, in order to give the producers the possibility to demonstrate that their product are “environmentally and socially friendly” and to provide the consumers with easily intelligible tools to evaluate the consequence of their purchases.

Forest Management and Chain of Custody certification

The Forest Management certification aim is to put rules on how the forests have to be managed, to meet the social, economic, ecological, cultural needs to join the principles of sustainability. They always include managerial aspects as well as environmental and social requirements.

On these bases the major certification schemes have developed rules, policies and standards that further define certain specific requirements.

Some of the points required by the principal forestry certification schemes are listed below: they could appear almost basic, but it has to be considered that in many places even these basic requirements are not fulfilled, and that here is where the Forest Management can have the biggest positive impact:

- Prohibit conversion of forests or any other natural habitat;
- Respect of international workers rights;
- Prohibition of use of hazardous chemicals;
- Respect of Human Rights with particular attention to indigenous peoples;
- No corruption – follow all applicable laws;
- Identification and appropriate management of areas that need special protection (e.g. cultural or sacred sites, habitat of endangered animals or plants)

Types of certification

a) Forest Management Certification (FM)

This is a certification scheme reserved to **forest managers or owners** who want to prove that their forest operation is socially beneficial and managed in an environmentally appropriate and economically viable manner, according to specific principles and criteria set by a recognized third party organization. This is commonly a *Business to Business* certification.

b) Chain of Custody certification (CoC)

Chain of Custody certificates trace certified timber through the production chain: this scheme is for **companies** that **manufacture, process** or **trade** in timber or non-timber forest products and want to demonstrate to their customers that they use responsibly produced raw materials. Chain of Custody certificate helps companies to strengthen their sourcing policies and comply with public or private procurement policies.

For completeness a comment received by CVG and, in other terms, by some other stakeholders about the difficulty to demonstrate the exact amount of certified fibres in the specific product, is below reported:

“In practice the vast majority of Chain of Custody traded material changes ownership as Mixed Sources by methods using one or other form of credit account, with systems like Mixed Percentage and Mixed Credit (FSC) or Mixed Percentage Volume Credit Method (PEFC). Mixed Credit and similar systems rely on the fact that at the source of harvesting the exact nature of the raw material is known (the Chain of Custody part) and that additions to this harvest may not have the same level of traceability, but at least comply to a set of minimum requirements. For many practical reasons, mixing of these streams usually already starts at the point of conversion, or when waste streams of saw mills and other uses are mixed with wood at the pulp mill. To maintain Chain of Custody, right from the start a credit account is applied to ensure that no more intermediate material changes hands from one party to the other than actually harvested Chain of Custody material. The credit account usually comprises a period of several months, up to a maximum of a year. Within that year the actual mixture of Chain of Custody raw material and other material may vary anywhere between 0 and 100 % , but when the mixture changes hands also the credit changes hands. In the case of mixed credit it always implies 100 % CoC, in other cases the % CoC is stated on invoices. The credit sold will be subtracted from the credit account of the seller and added to the credit account of the buyer. The nature of this system ensures that never more Chain of Custody leaves the chain than originally entered the chain. It also means that no exact amount of actual presence of Chain of Custody harvested fibres in a specific product can be stated. Correct use of the

systems and of the administrative proof is audited independently by third party certification authorities.”

c) Controlled Wood

Some Organizations (i.e.: FSC) give, as well, the possibility of certifying wood products also if the timber or the raw material used comes from “not certified” forest. The so called “controlled wood” can be used for CoC certification scopes.

Obviously the companies who want to sell their wood as “controlled” have to respect some requirements (standards) provided by the certifying organization, in order to comply with some basic principles of sustainability.

Controlled Wood supports also the production of Mixed Sources by providing certified companies with tools to control the non certified wood in their product groups, to avoid the wood produced in socially and environmentally most damaging ways.

The non-certified portion has to comply with the Controlled Wood standards which enable manufacturers and traders to avoid unacceptable timber and timber products.

FSC Controlled Wood, in particular, specifies the following five unacceptable origins:

- Illegally harvested wood;
- Wood harvested in violation of traditional and civil rights;
- Wood harvested in forests in which High Conservation Values (areas particularly worth of protection) are threatened through management activities;
- Wood harvested from conversion of natural forests;
- Wood harvested from areas where genetically modified trees are planted.

The Controlled Wood must be independently verified before it is mixed with certified material to become part of a product that can be sold carrying a label.

“Other organisations (i.e.: PEFC) allow mixing of Chain of Custody raw material with other material, as long as it is ensured that this other material originates from non controversial sources, being defined as not being harvested illegally or unauthorized according to local law.” (CVG)

The statistical analysis concerning “Certified forest products markets 2007-2008” and the “Green Public Procurement for Copying and Graphic paper” section have not been here reported: for more information about data, please, refer to the 1st Background Report version 13th March 2009 (Chapter 2.5, page 21 and chapter 2.6).

2.6 VIRGIN VS. RECYCLED PAPER: CONSIDERATIONS

The following considerations are based on the results of a comparative analysis from different sources on the main environmental impacts, involving different pulp grades, summarised in our “Study for the Copying and graphic paper criteria revision” WP1 Final Report (19th Dec 2008)⁵

In many analysed cases the product with less environmental impacts was the recycled unbleached paper. The paper production involving bleaching treatments, although recycled paper is used as raw material, has higher impacts, often in line with the virgin paper production.

The comparison gives a clear picture that recycling is only one aspect of paper's life cycle and can result higher emissions in some impact indicators (i.e. GWP, Eutrophication) compared to papers made of virgin fibres.

Also the LCA made by UBA “*Life Cycle Assessments for Graphic Papers Environmental comparison of recycling disposal processes for used graphic paper and of paper products for newspaper and magazine publishing and for photocopying*”⁶ and the EU GPP Training toolkit background document for Copying and Graphic Paper (2008) have been considered.

For more detailed info please refer to the 1st Background Report, version 13 March 2009 (chapter 2.7, page 29-30)

From these studies, as the EU GPP Training Toolkit Background product report for Copying and Graphic Paper developed by ICLEI for the European Commission (2008) concluded, basing on the UBA 2000 study above mentioned, on the IFEU 2006⁷, and on and on the last BREF document (2001) : “*production processes for paper based (totally or mainly) on post-consumer recovered paper fibres (recycled paper) use much less energy and water than those for paper based (totally or mainly) on virgin fibre*”...“*however the production process of paper based (totally or mainly) on virgin fibre is still characterised [...] in many cases by a lower fossil CO₂ emission.*”

“Both types of paper need to be purchased, as the amount of recycled paper cannot cover the total paper demand in Europe, and as there would be not recycled paper without having paper made from virgin fibres [...]. The key issue is recyclability, not the recycled origin of fibres”.

⁵ cap. 4.7 - LCA comparative analysis on virgin - recycled paper production (pag. 61)

⁶ UBA, 2000

⁷ IFEU 2006, “Ökologischer Vergleich von Büropapieren in Abhängigkeit vom Faserrohstoff”

3 Comments and proposals on existing criteria overview coming from the stakeholders

The following modification proposals of the current criteria for copying and graphic paper product group are the feedbacks coming from questionnaires, meetings and other contacts that have occurred since the project started.

Meanwhile reporting these proposals, a reference to the Appendix 4.1⁸ was also provided at the end of the 1st Background document, version 13th March 2009; in that point, some ISPRA elaborations based on real figures collected from EU and extra-EU pulp and paper producers have been discussed.

This appendix has not been reported here again because no further information and updates have been received by industries since the last AHWG (27th March 2009), and because some stakeholders affirmed that those data could not be representative of the whole market and thus it could not be taken as a reference.

Regarding the “not representativeness” of the results, it has to be underlined that very few producers/CBs have provided data to carry out a more complete study on the current European situation of the pulp and paper industry.

At the end of each discussion on the different criteria you will find a table synthesising the comments and the positions provided by the stakeholders.

The criteria proposals and the modification made to the most discussed hot points are mostly based on the outcomes of the **3rd AHWG meeting** held in **Brussels on November, 5th 2009** and on the last comments made during the **EUEB meeting of December, 9th 2009**: in this document only a synthesis of the comments received during the AHWG and EUEB is reported. You can also consult the “Minutes of the 3rd AD HOC WORKING GROUP (AHWG) Meeting on the Revision of the EU Ecolabel criteria for Copying and Graphic Paper”, distributed on November, 23rd.

⁸ Analysis of emission and energetic consumption data of 38 paper mills and 158 pulp producers

Definition of the product group (Commission decision, Article 2)

The **product group is currently defined** as follows:

“Sheets or reels of unprinted paper which are used for printing or copying or writing or drawing. Newsprint, thermally sensitive paper and carbonless paper are not included in the product group”.

The necessity to better specify the “scope” of this product group emerged during the 1st AHWG meeting: the clarification if certain grades of paper can access or not to the labelling (i.e. special coated paper, paper used for sacks and bags, newsprint - not printed - paper, etc) was asked and some comments suggested widening these criteria to newsprint and to all paper grades.

About newsprint, it seems more appropriate to include it in the scope of “printed paper products criteria” (at the moment still in interservice consultation) and paper used to produce newsprint at the moment could not be awarded.

The extension to **monoglated** paper grade had also been requested by some producers.

Some stakeholders proposed a new definition for the product group, based on the manufacturing process used to produce the paper, and not on the final use of the product itself, as it currently happens.

They suggested a wider scope, e.g. "Graphic paper including all end-uses", for example: fine paper for various printing, packaging and office applications like copying and Magazine & Newsprint Paper with its various transition grades used for printing and other end uses for graphic paper.

The possible inclusion of a limit on grammage, as defined in the European GPP on copying and graphic paper, did not receive the agreement of most of the stakeholders. Anyway the EU GPP definition should be taken into account.

1ST AHWG PROPOSALS

Some stakeholders propose the following definition: *"Graphic paper including all end-uses (e.g.: fine paper for various printing, packaging and office applications like copying and Magazine & Newsprint Paper with its various transition grades used for printing and other end uses for graphic paper).*

Simplifying, it could be *"Graphic paper" or "Paper suitable for printing or other graphic purposes".*

The reason for introducing a similar proposal is to give the possibility to manufacturers producing also newsprint paper to use EU Eco-label also on that, because, apart from the end use of the product, the production processes and the materials used are the same of those for graphic paper. Furthermore, other environmental labels already give the possibility to award newsprint and magazine paper (i.e. the German Blauer Engel). Some manufacturers producing newsprint paper

in several European countries, showed interest, during the consultations for the current revision project, in using the Ecolabel on their products: thus showing the need to get a wider system for this grade that, at present, cannot be labelled at European level.

Mono Glazed (MG) papers instead are rather seldom used for printing, i.e. those grades are sold to papers used for candies, food wrappings, table cloths etc...The best long term solution in regards of MG and bag papers as well, would probably be to develop own criteria for packaging papers and converted paper products, because their production process can differ pretty much from that of copying and graphic paper.

An enlargement of the product group definition to the newsprint and magazine paper (still not printed), with the chance for the applicant to put the Ecolabel logo on the product near such a phrase, e.g.: “Printed on Ecolabel paper”, was considered by some stakeholders be a powerful tool to amplify the diffusion of the EU flower between the Member States and to widespread a better environmental consciousness among the consumers.

Moreover it would be an occasion to realign the PG scope with the CEPI definition of “Graphic paper” (see Table 1.2, page 7).

1) If an enlargement of the criteria scope should not be considered as a possible solution, in order to make the definition clearer the generic GPP definition⁹ could be used:

“Unprinted paper for writing, printing and copying purposes sold in sheets or reels - Finished paper products, such as writing pads, drawing books, calendars, manuals, etc. are not included.”

In any case, in order to include or exclude any paper grade from this product group it seems fundamental to know which will be the exact and final definition of “Printed Paper Products” in the draft which is currently in the inter-service consultation.

2nd AHWG HIGHLIGHTS

During the 2nd AHWG most of the stakeholders agreed with the exclusion of packaging, wrappings, monoglazed and photographic papers from the scope of this product group. About the definition of the scope, it has to be highlighted that the definition “a)” proposed during that meeting (inclusion of fine paper for various printing, packaging and office applications and magazine & newsprint paper) would create some problems because it would leave the possibility to use the EU Ecolabel logo on the finished product (that is, in fact, a “printed product”). Some stakeholders suggested to give the producers the possibility to put on the final printed product the phrase “*printed on EU Ecolabel Copying and Graphic paper License n °xx/yy/zz*”: in this case a further “assessment and verification” would be required, in order to grant the correct traceability of the product and the correspondence

⁹ EC green public procurement, 2008: page 26.

between the license numbers printed on the final product and those of the paper products used for the printing, and in order to avoid possible misuse of the Logo.

In conclusion, most of the participants and the Commission supported the exclusion of newsprint and final finished product from this product group: the new definition will be therefore consistent with the one reported on the EU GPP background document for Copying and Graphic Paper and will include only white, not printed paper (i.e.: *“unprinted paper for writing, printing and copying purposes sold in sheets or reels. Finished paper products such as writing pads, drawing books, calendars, manuals, etc. have not been included”*¹⁰).

These finished products should be instead included in the Printed Paper Products Draft on which the Commission is currently actively working.

Table 3.1 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	EEB and BEUC	Aims of the criteria	To rehabilitate the sentence “encouraging the use of recycled fibers” because of the importance of the Ecolabel in forcing the behaviours of the consumers toward recycling.
	UPM	Newsprint paper	To include newsprint paper with slightly tailored criteria. There's no difference in production process of graphic and copying papers and newsprint: end use of paper shall not restrict possibilities to use eco-label for newsprint paper on a European wide scope.
	International Paper	Board products	They propose to add boards to the definition of the product category, "copying and graphic paper and board".
After October, 9th 2009	German CB	Product group definition	The German CB agrees with the proposal to have EU Ecolabel criteria for the newsprint in both way, including newsprint in C&G paper or with a separate criteria document.
	Austria CB	Newsprint paper	Supports the inclusion of newsprint into the product group.
	Dutch CB	Newsprint paper	Suggests to include newsprint in the C&G paper criteria.

¹⁰ EU GPP, 2008

3rd AHWG HIGHLIGHTS and other comments

At the end of the discussion, it has commonly be decided to give the possibility to award also other kind of products, including thus in the product scope definition also the following paper grades:

- **Newsprint paper:** specifying that we are dealing only with “paper substrate”, and not with the printed product;
- **Monoglazed paper:** also if it is not properly used for printing purposes, monoglazed paper substrate is not different from other C&G paper;
- **Graphic boards:** to exclude packaging boards, converted products will explicitly be excluded. The new definition will be reworded as follows: “copying and graphic paper shall comprise sheets or reels of **unprinted paper** and **not converted boards**”.

As discussed during the meeting, the current criteria are adaptable also for the other paper grades, but a mandatory limit on the % of recycled or certified fibers should be fixed for newsprint paper .

During the last EUEB meeting a further writing has been proposed by the Commission: besides specifying some of the paper grades that are excluded from the application of the criteria, a sentence like “*All the products that are not explicitly allowed by this article cannot be awarded with the EU Ecolabel for Copying and Graphic paper*” should be introduced.

Furthermore it has rightly emerged that the proposed definition was misleading about Monoglazed paper: this paper grade, mostly used for packaging purposes, was explicitly included in the criteria and excluded at the same time because of the sentence “*Thermally sensitive paper, photographic and carbonless paper, **packaging and wrapping papers** and products containing fragrances **are not included in the product group***”. Thus, in line with the scopes of the product group, the monoglazed paper has finally been excluded from the group definition.

Criterion 1. – Emission to air and water

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

EMISSION TO WATER AND AIR	EUROPEAN NATIONAL LABELS			
	Eco-label	Nordic Swan	Blauer Engel	DGQA
				
	a) COD : Pcod < 1.5 S : Ps < 1.5 NOx: Pnox < 1.5 Ptot < 3 b) AOX < 0.25 kg/t	a) COD : Pcod < 1.5 S : Ps < 1.5 NOx: Pnox < 1.5 P : Pp < 1.5 Ptot < 4	n.a.	a) COD: No more than 95% of legislation limits for water residuals. b) AOX: bleaching with

	c) CO ₂ < 1100-1000 kg/t(CO ₂ from fuel and electricity)	b) AOX< 0.4 kg/t c) CO ₂ < 300-1000 kg/t (CO ₂ just from fuel)		chlorant compounds are banned.
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The current criterion can be divided into three sections concerning the parameters that have to be managed for the paper and pulp production. The producers have to assess their emissions expressed in term of points (P_i) by a specific calculation method and they have to refer to a specific table containing the reference values for the emissions.

Section (a): COD, S, NO_x

For each of these parameters, the emissions to air and water from the pulp and the paper production are expressed in terms of points (P_{COD} , P_S , P_{NO_x}) as detailed in the section.

Some comments highlighted that the current calculation method is quite complicated and they asked for a **simplified method**.

Some paper producers have highlighted a problem about the NO_x and S calculation. In the assessment and verification of the criterion in fact they pointed out that *“the calculation of the points for COD, S and NO_x [...] shall include all emissions of S and NO_x which occur during the production of pulp and paper, including steam generated outside the production site, **except those emissions related to the production of electricity**”*.

The manufacturers, however, are rarely able to distinguish the emission values for S and NO_x when they apply the cogeneration system. The result could be an overestimation of the values that often can exclude them from the range of acceptable values for the Ecolabel accreditation. In these cases, the opportunity of using a calculation formula that provides a simplified allocation for the split of the contribution due to the generation of steam and to the production of electricity should be given to the applicant.

For some stakeholders it seems necessary to include also the **phosphorus (P)** to the list of the current parameters for the water emissions, with different values for **P total** and **P inorganic** (phosphorus comes both from the production process and the water biologic treatment).

From comments received during and after the 1st AHWG meeting it emerged that some matters should be considered about P:

- a. P can be measured in several ways which should be noted, so that additional measurements from the applicant aren't required just due to criteria. Most commonly used are Total P, inorganic P and PO₄.
- b. P can originate from different sources: it depends on the used wood and/or it can be added to mill's biological waste water treatment plant as nutrient to keep biological sludge active, thus probably we should differentiate these two different origins.

On the other side, industry is concerned by the fact that, if a limit for P is added, there will be the possibility that mills having biological treatment plants must diminish their dosage too much, leading to a general weaker purification of waste water. P is an expensive nutrient and mills try to optimize the dosage anyhow. In general, P discharged by the paper industry is minimal if compared to the discharge by communal waste water treatment plants or agricultural activities.

Moreover the producers state that they have no control on this parameter, because it is often strictly dependent on the wood species (e.g. *Eucalyptus spp.* have a high natural concentration of P). The problems with phosphorus are confined to the pulp production, because it is not intentionally added to the following paper production process. So, in their opinion this criterion would add a complication without any added value.

For instance the adoption of this parameter could imply the exclusion of most of the Iberian producers and other producers using *Eucalyptus* pulps.

It is technically known that Eucalyptus based pulps present by nature higher concentrations of phosphorus, a fact reflecting the chemical characteristics of this type of wood, not of the production process. It is also known that the Eucalyptus pulp has been produced in Iberia for more than 50 years, with no record of environmental impact directly related with the phosphorus concentration levels.

Eucalyptus pulps are worldwide recognized as some of the best, if not the best raw material, to produce high quality office and graphical papers.

Adopting a strategy that sets phosphorus concentration levels below the ones that are by nature from pulps produced typically by Eucalyptus, a downgrade of the quality of the papers may result, making European producers less competitive in comparison with overseas producers based on other high quality short fibers (like the Indonesian producers with acacia based paper), and to leave out of the Ecolabel the Iberian and other producers that normally use Eucalyptus pulp in their papers [according to third party information, it is estimated that a large proportion (>50%) of uncoated woodfree papers (UWF) produced in Europe, incorporate Eucalyptus pulp].

This issue emerges also in the BREF document (BREF, page 102: Table 2.39, note 4), where it is underlined that *“due to the higher content of phosphorus in the pulp wood, Eucalyptus pulp mills cannot achieve the values of “total P emission” mentioned in the table (i.e.: 0.04 - 0.06 kg P/ADt), for the production of bleached kraft pulp. Current mill data for P emissions to water range from 0.037 - 0.23 kg P/ADt. The average of the reported data is 0.11 kg P/ADt”*

Anyway the Consumers and Environmental associations would agree with the introduction of this new parameter.

Calculation Formula

A deep analysis was made on the calculation formula reported on the criteria text, and it has been noticed that it differs from the one cited in the User's manual for Copying and Graphic Paper, especially when it has to be applied to a mix of different kind of pulps.

NOTE: for simplicity, the following discussion is made for the COD points calculation only but it applies to all the other emission parameters.

a) Criteria's formula:

$$P_{\text{COD}} = \text{PCOD, pulp} \times \text{CODweighted reference, pulp} / (\text{CODweighted reference, pulp} + \text{CODreference, paper}) + \text{PCOD, paper} \times \text{CODreference, paper} / (\text{CODweighted reference, pulp} + \text{CODreference, paper})$$

b) User manual's formula:

$$P_{\text{COD}} = [\text{CODweighted ref pulp} / (\text{CODweighted ref pulp} + \text{CODrefpaper})] \times \text{CODpulp} / \text{CODweighted ref pulp} + [\text{CODrefpaper} / (\text{CODweighted ref pulp} + \text{CODrefpaper})] \times \text{CODpaper} / \text{CODrefpaper}$$

$$= (\text{CODpulp} + \text{CODpaper}) / (\text{CODweighted ref pulp} + \text{CODrefpaper})$$

By making some mathematical simplifications, the first formula should correspond to the second one that, moreover, matches up with the formula used in the tissue paper criteria new criteria (2009/568/EC), in the draft for Printed Paper Products (requirements for the substrate) and with the calculation method used by the Nordic Swan.

But, this does not happen, because an error seems to occur when using the following conversion, as indicated in the criteria text:

$$P_{\text{COD, pulp}} = \sum (\text{pi} \times \text{CODpulp, i} / \text{CODreference, pulp})$$

That, in order to perform the simplification, should be:

$$P_{\text{COD, pulp}} = \sum (\text{pi} \times \text{CODpulp, i}) / \text{CODweighted reference pulp}$$

where $\text{CODweighted reference, pulp} = \sum (\text{pi} \times \text{CODreference, pulp})$

as confirmed also by the Printed Paper and new Tissue Paper criteria and by the Nordic Swan Criteria¹¹

By using the "criteria formula" "as it is" the emissions for pulps are generally underestimated.

Checking the user manual for copying paper this sentence can be read:

"The equation in the criteria document for the calculation of the number of points for the pulp production is the principle of the calculation and is used directly in the cases where only one type of

¹¹ Nordic Ecolabelling Paper products – Basic Module, 1.0 9 October 2003; page 17.

(*) Actually it should be added that the equation in the criteria document applies when only one type of pulp is present in the quantity of 100% of the pulp mix as the following example will show.

pulp is used (*). When various types of pulps with different reference values are mixed, the real emission values of COD as well as the reference value for the pulp mixture in the denominator in the equation shall be the weighted share of each pulp type in the moist paper. For calculation details see examples 1-4 in Annex 2.” ... that would confirm the error above explained.

Unfortunately this specification is not present on the current criteria, thus possibly leading to miscalculation of the load points P_i .

Thus, the correct calculation formula should be, in general, as the examples of the manual show:

$$P_{COD} = \frac{COD_{total}}{COD_{ref,total}} = \frac{\sum_{i=1}^n [pulp_i \times (COD_{pulp,i})] + COD_{papermachine}}{\sum_{i=1}^n [pulp_i \times (COD_{ref,pulp,i})] + COD_{ref,papermachine}}$$

This formula should apply for the calculation of each parameter, also P_s , P_{NOx} , P_e and P_f .

In the revision of these criteria we think that this last calculation method has to be used, and the former criteria corrected.

An example of the difference resulting by using the two different approaches can be found at page 23 of the 2nd Background Report - Version 31th July 2009.

1ST AHWG PROPOSALS

Calculation Formula: amending the calculation formula (adopting the user's manual one) .

It has however to be considered that by doing that, the modification proposal will produce higher values compared to those obtained using the current formula.

2nd AHWG HIGHLIGHTS

It has commonly been accepted to adopt the calculation formula used into the user's manual for Copying and Graphic paper: the current formula must be corrected as indicated in the 1st Draft criteria proposal, taking into consideration that the sentence “pulp_i with respect to air dried tonne **copying and graphic paper**” in the criterion text have to be substituted by “pulp_i with respect to air dried tonne (ADT) of **pulp**”.

As properly underlined during the meeting, the results from the new calculation formula are higher, in terms of emission values, compared to the old method: considering this fact, particular care should be used in this sense when proposing of furthering lowering current reference values or current emission limits.

About the reference values for emissions from pulps production, some stakeholders proposed to abolish the difference between kraft pulp and sulphite pulp to a unique pulp grade under the denomination of “Chemical pulp” (including both the kraft and the sulphite pulp). The new proposed value is the one currently used for the kraft pulp. At the moment, for the COD calculation, in fact, a higher reference value is used for sulphite pulp than for kraft pulp.

About the problem of the consumption allocation, in case of integrated production of pulp and paper the following sentence could be reported at the bottom of the criterion 1 (a):

“In case of integrated mills, due to the difficulties in getting separate emission figures for pulp and paper, if only a combined figure for pulp and paper production is available, the emission values for pulp(s) shall be set to zero and the figure for the paper mill shall include both respective pulp and paper production”.

Table 3.2– Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Stora Enso; Sappi; Swedish CB; Assocarta	Deletion of sulphite pulp reference values	To keep Chemical Pulp sulphite and Chemical Pulp sulphate separate and their reference emission values as they are in the existing criteria. Wide documentation that sulphite pulping process has many environmental advantages compared to kraft (sulphate) pulping has been provided, unless COD discharge values can be higher.
	International Paper	Calculation Formula	Since the modified calculation formula gives higher results (by about 20%) proposal to raise the maximum admitted load point of each parameter Pcod, Ps, Pnox and the Ptot
	EEB-BEUC	Reference values	Some reference values are higher than the Bref indications
	Sodra Cell	Reference values	S and NOx reference values could be lowered
After October, 9th 2009	Austria CB	Emission to water and air criterion	Proposes to include an indication that reference and limit values for emissions to water and air could be changed according to revised BAT values before the next revision of Eco-Label criteria for "copying and Graphic paper".

Phosphorus

1) Basing on the references given in the BAT document (see par.2.4 of this document) and from the monitoring of a number of figures provided by some producers (see Appendix 4.1/1st Background doc), it is possible to suggest the introduction of the phosphorus parameter (P), in addition to those already included in criterion 1 (COD, SO_x and NO_x) see table.

Pulp grade/paper	BAT range	Values from industries (kg/ADT)	P reference EU Ecolabel Tissue Paper (kg/ADT)	P reference (kg/ADT) PROPOSAL
Chemical pulp (kraft and all others except sulphite)	0,01-0,03	0,01-0,07 (avg value 0,045)	0,045	0,045
Chemical pulp (sulphite)	0,02-0,05	-	0,045	0,045
CTMP	0,005-0,01	-	0,01	0,01
<i>Unbleached chemical pulp</i> ¹²	0,01-0,02	-	0,02	-
TMP/groundwood pulp	0,004-0,01	-	-	0,01
Recycled fibre pulp ¹³	0,005-0,01	0,005	0,01	0,01
Paper (not-integrated mills where all pulps used are purchased marketpulp)	0,003- 0,01	0,003 (uncoated) – 0,009 (coated)	-	0,01
Paper (other mills)	-	0,002- 0,008	0,01	0,01

In case of introduction of this new parameter, some stakeholders claimed that an exception could be made for the pulps made using *Eucalyptus spp.* as fibre. Basing on the consideration on the BREF/BAT made on page 37, for the *Eucalyptus* chemical pulp an average reference value of 0,11 kg/ADT could be introduced (values from 0,037 to 0,23 kg P/ADT).

More detailed technical information about these values has been provided by the *grupo Portucel Soporcel* and the *Portuguese CB*, which confirm that the main source of phosphate in the final effluent discharged by the pulp mill is due to the natural high concentration of P in the *Eucalyptus* wood.

Obviously, the introduction of the fourth parameter will imply a new limit for the total load point: **(P_{total} = P_{COD} + P_S + P_{NOx} + P_P)” = 4,0** that shall not to be exceeded.

2) Not introducing any parameter to limit the phosphorus emission to water could be a second option.

¹² Only in the Tissue paper criteria

¹³ Value obtained from calculation on the basis of the total

2nd AHWG HIGHLIGHTS

Most of the AHWG participants agreed in adding the Phosphorous parameter into the 1st criterion, but the issue concerning the *Eucalyptus* pulp production reference values has still to be solved. Two solutions have been proposed:

Solution 1: setting different values for the *Eucalyptus* pulp production, on the base of what the BREF document says and on some real figures (see above, proposal 1).

Solution 2: no exceptions in phosphorous reference values foreseen for *Eucalyptus* pulp.

The industry representatives confirm their concern about the introduction of the criterion for the reasons explained above (see 1st AHWG Proposal).

Although some participants expressed their concern about much stringent reference values to P discharge for *Eucalyptus* pulp, most of the stakeholders believe that this is a very important parameter to be addressed and no exceptions should be applied in setting limitation to it: the objective of the criterion would be to limit emissions to water, regardless of the origin of the phosphorous, weather it is naturally present in the wood or added at the waste water treatment plant.

For the second draft criteria it has been decided to propose the same reference values already used in the tissue paper criteria: the pulps used in papermaking for the two kind of paper are, in fact, very similar. The proposal is also justified by the will of harmonizing , when possible, Ecolabel criteria for similar product group.

Table 3.3 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Portucel Soporcel and Portuguese CB	Phosphorus limit	To have in consideration the typical values described particularly for pulp produced from eucalyptus (see Pulp and Paper BREF, Table 2.39 pag. 102): the parameter is not manageable by producers (<u>data provided</u>). The adoption of this parameter is considered as a deliberate exclusion of Iberian producers and other producers using Eucalyptus pulps.
	Assocarta	Phosphorus limit	To exclude the criteria on phosphorous as it increase the complexity of the system, it is not relevant impact for the paper production and it is discriminatory for the pulp production, as it is directly linked to the species used and, as a consequence, to the region of the world where those species grows.

	Who	Topic	Comments / Proposal
	CVG	Phosphorus limit	No discriminatory criteria or limits that could exclude Spanish or Portuguese Eucalyptus from ecolabel application, because they are important sources of Eucalyptus pulp for non-integrated paper mills.
	UPM	Phosphorus limit	If P will be added as a limit value, then there shall not be differences between geographical areas or tree species, but one European limit. Eucalyptus pulp is a main raw material at several UPM mills in Europe, and despite the fact that proposed limits would be rather challenging, they won't be impossible, even for eucalyptus use.
	International Paper	Phosphorus limit	If phosphorus is added, no exceptions should be made. The same reference value has to be set for all tree species including Eucalyptus pulps.
	Södra Cell	Phosphorus limit	Agree with the proposed reference values
	EEB-BEUC	Phosphorus limit	There is no need for increasing the P level when granting EU Ecolabel to products made of chemical pulp produced from eucalyptus forests. (Keep the P reference value to 0,04)
After October, 9th 2009	Dutch CB	Phosphorus limit	Dutch CB suggests not to make exception for the use of Eucalyptus pulp
	Metsäliitto	Loads point	Suggests to increase the single load points of the single parameters: Pcod, Ps, Pnox, Pp from 1,5 to 1,75. Keeping the Ptot=4. Thus giving more flexibility to eucalyptus mills to reach the limit.

3rd AHWG HIGHLIGHTS and other comments

Even if the average data provided demonstrate that at least the 15% circa of the Portuguese Eucalyptus pulp producers could comply the criterion also using the stricter reference value proposed for the other pulps, the problem is that the higher amount of P discharged by the mill has a natural origin, and it is not due to a technical gap of the industries. Besides, as underlined by the Portuguese CB and by the Portuguese Industry representatives, thanks to the high natural level of phosphorus in the effluents, there is no need to actively add chemical P-based substances in the biological treatments: thing that has to be considered, however, an environmental improvement. Anyway, many of the participants (see table 3.3) continue not to agree with the possibility of an exclusion for specific raw materials, but some of them have proposed alternative solutions; for example, UPM, International Paper and Metsäliitto Group suggest to increase the single load

points of the single parameter Pp from 1,5 to 1,75, keeping the Ptot=4. In this way an applicant that would be deficient about the P emissions could prove to be more virtuous on other parameters, (this proposal has been however considered not useful by Portuguese producers to solve their problem).

Another possibility could be to have different reference values for Phosphorous in case it is actively added in the wastewater for biological treatment or not (as it happens for Eucalyptus pulps).

Moreover, the possibility of using Iron Sulphate in order to extract the exceeding P from the waters and to use it as fertilizers, suggested by EEB-BEUC and by the Danish CB, can be excluded if we take into consideration the results of the “Impact assessment of the introduction of tertiary treatment”, provided by the Portuguese CB (document “Comments PT_Ecolabel_C&G_16Nov2009”), demonstrating that: *“the introduction of a tertiary treatment doesn’t improve the global environmental performance and represents a significant cost. [...] It was calculated an increase on the global warming potential (on both scenarios applying tertiary treatment) and even an increase of the eutrophication potential is increased using Aluminum Sulphate.*

According to the IPPC Directive the adoption of a Best Available Technique should consider, besides the environmental performance, the economical viability and specific geographical conditions.

The adoption of this technique in this specific case (pulp production from E. globulus wood in Iberia) doesn’t fulfill any of the mentioned criteria.”

Besides, it has to be underlined also that the use of iron sulphate means that fossil energy (resulting in further energy consumption and carbon emission) is required to produce the iron sulphate and to dewater the sludge that results from the precipitation. This water rich sludge requires extra transport or drying, again using fossil energy. When the sludge is land filled, it puts extra environmental pressure on soil. In IPPC terms this measure leads to cross media effects, with possible unfavourable integral effects (CVG comments).

Emissions to air

In order to solve the allocation problem for S and NO_x emissions related to the production of electricity (that have to be excluded from the P_S and P_{NO_x} calculation), the same solution adopted in the Tissue paper criteria (2009/568/EC) can be proposed.

In case of a co-generation of heat and electricity at the same plant the emissions of S and NO_x from electricity generation can be subtracted from the total amount. Following equation can be used to calculate the share of the emissions from the electricity generation:

$$2 \times (MWh(\text{electricity})) / [2 \times MWh(\text{electricity}) + MWh(\text{heat})]$$

The electricity in this calculation is the net electricity, where the part of the working electricity that is used at the power plant to generate the energy is excluded i.e. the net electricity is the part that is delivered from the power plant to the pulp/paper production.

The heat in this calculation is the net heat, where the part of the working heat that is used at the power plant to generate the energy, is excluded i.e. the net heat is the part that is delivered from the power plant to the pulp/paper production.

Table 3.4 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Portucel Soporcel	Allocation rules	Clarify if the value of the net electricity is the pulp/paper mill consumption or if it is the total electricity production minus the cogeneration consumption. Clarify the share of emission allocation between electricity and steam. Specify what could be exactly subtract from the total amount of emission due to the cogeneration.
	UPM	Allocation of S and NOx	UPM to better clarify the criterion has proposed to substitute following text: “In case of a co-generation of heat and electricity at the same plant the allocation of the emissions of NOX and S the electricity (the net electricity) and the heat generation (the net heat) according to following equation” With the following one: “In case of a co-generation of heat and electricity at the same plant <u>the emissions of S and NOx from electricity generation can be subtracted from the total amount.</u> Following equation can be used to calculate the share of the emissions from the electricity generation”

The Swedish CB has underlined that, due to the foreseen approval of criteria for “printed paper products” and thus for brown envelopes, specific reference values for the **Unbleached chemical pulp** should be introduced. Making reference to the Nordic Swan criteria and to the BREF/BAT document¹⁴, it seems reasonable to propose the following new reference values:

¹⁴ See table 2.1 of the present document.

Pulp Grade/Paper	Emissions (kg/ADT)*			
	COD _{reference}	S _{reference}	NO _x _{reference}	P _{reference}
Unbleached chemical pulp	10	0,6	1,6	0,04

Section (b): AOX

The AOX current limit is **0,25 Kg/ADT** for each pulp only (not further limits on the pulp mix).
 The applicant provides test reports using the following test method: AOX ISO 9562.

1ST AHWG PROPOSALS

A revision and update of the reference norms to facilitate the applicant for the assessment and verification was required.

Some stakeholders suggested to lower limits for AOX emissions and in order to narrow the gap with the other Ecolabel paper products criteria, for the AOX limits the same values chosen for the new Tissue Paper criteria (2009/568/EC) could be considered:

“The weighted average value of AOX released from the productions of the pulps used in the eco-labelled tissue product must not exceed 0.12 kg/ADT paper. AOX emissions from each individual pulp used in the paper must not exceed 0.25 kg/ADT pulp”.

Many participants to the 1st AHWG expressed concern with the proposal of a setting lower limits on AOX and with the introduction of a AOX control also at the paper mill.

UPM highlighted that the latest scientific literature shows that there's no environmental difference between modern ECF (Elementally Chlorine Free) and TCF (Totally Chlorine Free) bleached chemical pulps when biological waste water systems are used and that no environmental impacts are found when pulp's AOX is less than 0.5 kg/ADt, thus it cannot be shown unambiguously that TCF is substantially better for the environment than ECF. UPM referred that TCF bleaching causes very low AOX emissions, but uses more energy, chemicals and wood for tonne of pulp than ECF (Documentation provided by UPM: *INFOR-Projekt-Nr. 19 Comparison of Environmental Effects on Aquatic Life in the Manufacture of ECF and TCF Sulphate Pulps- Dr.-Ing. U. Hamm Prof. Dr.-Ing. Dr. h.c. L. Götsching Institut für Papierfabrikation ; Effluents from bleached kraft pulp manufacture-Review focused on literature on environmental impacts, published since 1995-Klaus Niemelä-28.2.2007 www.kcl.fi*).

It has to be underlined that this last consideration has been disputed by Swedish CB and by the producer Sodra Cell but confirmed to some extent by the pulp producers: Stora Enso, and SCA (at least for modern ECF plants).

AOX per tonne of final paper would be only relevant for wood free papers as quality requirement sets the use of chemical pulp only. It was already shown that the availability of suitable recovered fibre is very limited for wood free papers. All other grades have only a certain amount of chemical pulp and their AOX value would therefore be far below 0.12 kg/ADt. By taking the proposed 0.12 kg/ADt paper limit from Tissue papers into use would mean that 100 % BAT based chemical pulp won't be good enough as a raw material for wood free graphic paper grades.

Criteria supporting only TCF bleached pulps would be against Life Cycle approach as it would impact negatively to wood use and energy efficiency.

For this reason the proposal from some stakeholders was to maintain the requirement as it is now. BEUC and EEB instead are strongly in favour of using only TCF pulps since no studies are available on long term effluent effects of chlorine dioxide; if the ECF pulps are banned, then the AOX limit for pulp mix could be lowered since TCF pulps can achieve even 0,05 kg/ADT.

It has to be highlighted, however, that other Ecolabel criteria (i.e. EU Ecolabel Tissue paper new criteria) impose limit both on each single pulp (0,25 kg/ADT) and on the pulp mix (0,12 kg/ADT), and that also the Nordic Swan imposes the double check both on the pulps (but the limit here is quite higher: 0,4 kg/ADT) and on the pulp mix (0,25 kg/ADT).

Moreover the introduction of an additional control on the emission values also at the output of the paper mills could be an upgrade for the current criteria.

For these reasons the following 2 possibilities for the next criteria were foreseen:

- a) To leave the current requirement unchanged;
- b) To extend the control both to the single pulps and to the pulp mixes, keeping the current limit value (i.e.: 0,25 kg/ADT) for the single pulps and for the mix to put the limit to **0,15 kg AOX/ADT**, which seems to represent an achievable limits, as suggested also by Appendix 4.1/1st Background doc) .

It has to be underlined that (Appendix 4.1-1st Background doc– Pulps) most of the pulps exceeding the current limit value for the AOX (0,25 kg/ADT) originate from North America.

2nd AHWG HIGHLIGHTS

The proposal “b)” (see above) was not accepted by many of the industry representatives. Some participants have underlined that lowering the limit value for AOX too much could exclude a significant portion of the current pulp available on market and it has also been highlighted that

most integrated mills use only one pulp grade, so that different reference values for single pulp and pulp mixes could create confusion. In addition it was sustained that, in this case, comparing graphic and tissue paper would be not significant because of the different production processes.

Unless this last consideration, many comments received after the distribution of the 2nd Background documents returned to propose a limit both to single pulp and to the pulp mix, clearly specifying that, in case that only one pulp grade is used, the limit value to be taken into consideration is the one referred to the single pulp.

In Appendix 4.1 of the 1st Background document, it has been demonstrated that lowering the current limit to 0,2 Kg/Adt pulp should not exclude too many pulp mixes and would represent an improvement for the criteria (of course keeping in mind that those graphics represent the best paper mills on the market).

Moreover, if a limitation to the AOX from pulp mix is introduced, 0,15 Kg/Adt pulp mix could be a realistic value.

EEB and BEUC underlined the environmental relevance of AOX and that data from BREF should be considered to restrict it as much as possible.

Table 3.5 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Swedish CB	AOX limit	If the limit for the AOX value for a pulp is set to 0.20 then there should be a limit 0.15 kg AOX/tonne pulp for the mix. Data from works experiences states that the normal values for ECF bleached pulps are 0.1-0.17 kg AOX/tonne pulp. The new modern ECF mills show values 0.05-0.1 kg AOX/tonne pulp.
	Danish CB	AOX limit	The limit should be set to 0.15 kg AOX/tonne pulp or aligned with Tissue paper criteria.
	Portucel Soporcel	AOX limit	The weighted average value of AOX released from the productions of the pulp mix used in the eco-labelled copying and graphic paper product must not exceed 0,15 kg/ADT pulp. AOX emissions from each individual pulp used in the paper must not exceed 0,25 kg/ADT pulp.
	CVG / International paper	AOX limit	To maintain the present level of 0,25 kg/ADT. It is not relevant at all lowering the AOX values, and this should be based on environmental significance and not on a clerical adjustment of a number.
	Stora Enso	AOX limit	The AOX limit value can be no less than 0,3 AOX limit, furthermore, from an environmental point of

	Who	Topic	Comments / Proposal
			view there are no difference between ECF and TCF (data provided).
	Södra Cell	AOX limit	The proposed limit of 0.20 kg/Adt still too high as then still 80% of all mills pass the limit. A limit of 0.15 kg/ADT is achievable with ECF production.
	UPM	AOX limit	The current limit could be decreased to 0.22/0.2 kg, but they do not agree with an additional limit value for paper. Biological waste water treatment could be mentioned as an additional requirement for chemical pulps.
	EEB-BEUC	AOX limit	For the prevention principle, avoiding as much AOX as possible that could include persistent pollutants, limit for each pulp should be 0.15 kg/ADT
After October, 9th 2009	German CB	AOX limit	German CB supports the proposal to lowering the AOX limit. Basing on data for German mills data CB propose to lowering the value to 0,15 kg/ADT per pulp.
	Austria CB	AOX limit	Proposes to lowering the limit as low as possible, according with the German CB proposal suggest to set the limit to 0,15 kg/ADT for pulp.
	Metsaliito	AOX limit	Supports the proposal to set the limit to 0,20 kg/ADT for each pulp used

3rd AHWG HIGHLIGHTS and other comments

Although some stakeholders were reluctant in accepting a lowering of the current value for AOX emissions (see table 3.5) without any proved evidence of an environmental benefit coming from this choice, most of the participants and the Commission, among the two proposals made in the 2nd Draft Criteria Proposal, would however prefer Proposal A, providing a lowering of the AOX emissions from the production of each pulp used to 0,20 kg/ADT". This solution would also be a good compromise not to complicate too much the criterion.

Many distant and different positions have been expressed during the EUEB meeting on this topic: as already summarized in table 3.5 some of these were for lower limits, some others for leaving them as they currently are. Most CBs stated however that AOX is an important environmental issue also in spite of a lack of scientific evidence. Thus the last proposal (0,20 kg/ADT for pulp) seems still to be the best compromise possible at present.

Apart from all the considerations made, a lower emission of Chlorine compounds into water is commonly considered as an environmental improvement: this is one of the reasons that has brought to get stricter limit values.

Section (c): CO₂

The current values for CO₂ emissions are:

- **1000 Kg/t** for integrated paper mills
- **1100 Kg/t** for non integrated paper mills.

Some stakeholders suggested to lower the current CO₂ hurdles, because they seem too easy to reach.

1ST AHWG PROPOSALS

It has to be pointed out that the above mentioned “easiness” to reach the current values is relative and depends on the mill's location and local energy supply. Integrated mills with chemical pulp production at the site are able to reach the limits "easily" as chemical pulp mills burn all lignin (CO₂ neutral biomass). Non-integrated mills which rely on local energy supply, be it natural gas or coal can have challenges with existing limit already (Central and Southern Europe)¹⁵.

Taking into consideration that the new limits for tissue paper criteria (2009/568/EC) are much higher (1500 kg/ADT) than the current for graphic and printing paper, it seems not necessary to tighten the existing values further.

The graphics presented in the Appendix 4.1/1st back doc – “Limit values: CO₂ emissions”, showed that the current limits are already stringent for the most environmental-friendly European paper industries.

2ND AHWG HIGHLIGHTS

During the discussion of this criterion most of the stakeholders have agreed to leave the limits as they are.

Furthermore it has been reminded that this criterion very much depends on the local reality of the electric energy source: countries using great amounts of biomass or nuclear power to produce electricity can easily comply with the limits imposed by the criterion, while countries using fossil

¹⁵ A producer has informed us that its Chinese paper mill would fulfil all the other criteria, but can't apply as the only available energy is based on coal.

fuels have great difficulties to respect the hurdles, especially in non integrated mills (see the proposal above).

Some CBs suggested to link this criterion to other policies, e.g. the GHG protocol, to approach the calculation of the CO₂ value: such a proposal would imply the use of “national mix conversion values” for the GHG calculation from electricity production and use rather than the average value currently used. Such a methodology would need an official, recognised and commonly agreed source that could furnish reliable characterisation factors to convert the electricity consumption value into CO₂ emissions, in agreement with the different single national fuel mixes.

GHG protocol makes reference to the “CO₂ Emissions from Fuel Combustion (2008 Edition)”¹⁶ published by IEA¹⁷: below a table summarising the Emission Factors for the Electricity production based on the different European national mixes¹⁸ is proposed.

¹⁶ Available to http://data.iea.org/ieastore/product.asp?dept_id=101&pf_id=305

¹⁷ International Energy Agency

¹⁸ EU 27 plus Norway considered

Table 3.6 – EU Countries Fuel-based Electricity Emission Factors for CO₂ (Source: IEA 2008)

Country	Electricity emission factors (g CO ₂ /kWh)
Average Europe (OECD Countries)	384
Austria	214
Belgium	260
Bulgaria	448
Cyprus	758
Czech Republic	527
Denmark	341
Estonia	640
Finland	242
France	85
Germany	404
Greece	725
Hungary	344
Ireland	535
Italy	404
Latvia	167
Lithuania	139
Luxembourg	326
Malta	834
Netherlands	394
Norway	7
Poland	659
Portugal	416
Romania	429
Slovak Republic	223
Slovenia	332
Spain	350
Sweden	48
United Kingdom	505

A valid further reference in this sense could be the European Reference Life Cycle Database (ELCD) currently under development by the JRC¹⁹ of the European Commission: this database is, unfortunately, still not usable for scientific purposes, as specified in the “data access and use” section published on the web site²⁰: “... All process data sets [...] are not to be considered as

¹⁹ Further info on <http://lca.jrc.ec.europa.eu/lcainfohub/index.vm>

²⁰ See: <http://lca.jrc.ec.europa.eu/lcainfohub/datasetArea.vm>

official reference data sets. The data sets are provided "as they are". A further methodological harmonisation and independent external review are foreseen as soon as the recommended methods and the review process will have been agreed as part of the International Reference Life Cycle Data System ILCD (foreseen to be available in late 2009)."

Other official data sources available on the public domain for the Ecolabel purposes are, at the moment, unknown.

Otherwise some CBs propose to lower the limit of 20%, although the difficulties that most of the producers declare in fulfilling the limit.

Concerning the CO₂ calculation the necessity to clarify the meaning of "non renewable resources" emerged, in order not to miss other environmental impacts due to the use of other "non renewable" (also if "non fossil") resources: this topic has, however, to be managed in the User's manual.

It has to be discussed how to consider the case of "green energy" in the calculation of the CO₂ emission rate: maybe the amount of green energy purchased and used for the production processes should not be considered. For "green energy", in this context, they are meant all the forms of energy obtained from sustainable sources including all renewable sources, such as biofuels, solar power, wind power, wave power, geothermal power and tidal power: credible proofs and appropriate documentation that these kind of energy are actually used at the mill or are externally purchased shall be provided by the applicant.

Table 3.7 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Swedish CB	CO ₂ electricity emission factor	The CO ₂ electricity emission factor should be the average European value of 400 g/kWh, because the current limit of 1000/1100 kg CO ₂ /tonne paper was based it. If national factors would be used, others limits must be evaluated and revised.
	Danish CB	CO ₂ electricity emission factor	The CO ₂ electricity emission factor should be the average European value of 400 g/kWh
	International Paper	CO ₂ electricity emission factor	International Paper agrees with the proposed criterion of using national CO ₂ electricity emission factor
	Stora Enso	CO ₂ electricity emission	To leave the criterion unchanged (EU average conversion factor)

	Who	Topic	Comments / Proposal
		factor	
	UPM	CO ₂ electricity emission factor	UPM wants to leave the criterion unchanged. The proposal to use the national CO ₂ electricity emission factor should be integrated with the non-European CO ₂ electricity emission factor in order to be able to calculate emissions from pulp supplied from outside Europe
	SCA	CO ₂ limits	To lower by 30% limits on CO ₂
After October, 9th 2009	Dutch CB	Green electricity	Dutch CB do not agree with the inclusion of a CO ₂ reduction possibility for green electricity.
	Metsaliito	CO ₂ limit	Suggests keeping the current limit and to leave the criterion unchanged in order to not make too many differentiation.

3rd AHWG HIGHLIGHTS and other comments

The discussion about the CO₂ emission limits has involved very different topics and has shown many points of view and many positions of the stakeholders on the various points of discussion. At the end of the meeting a common position has not been found.

Below a synthesis of the main discussion is reported:

- **Limits:** Danish and Swedish CBs asked to lower the current limit values; most of the other participants want to keep them unchanged;
- **Electricity conversion factors:** all the participants, except UK CB, agree in using the current conversion factor (400 g CO₂/kWh), instead of the proposed National conversion factors;
- **Green electricity:** some producers don't agree in introducing the possibility not to consider, in the calculation, the amount of electricity purchased from "renewable sources", while some others participants and the Commission believe that, rephrasing the proposal in a more correct way would be important to include such a criterion, in order to encourage the use of the so called "green electricity".
- Burgo group and the Swedish CB would differentiate the values of CO₂ among wood-free and wood-containing pulps, exactly like already happens for the Electricity in the Energy use criterion (Criterion 2).

Table 3.8 - Review table synthesis for criterion 1

Criterion	Theme	Existing requirements	New requirements proposal	Motivation
Emission to air and water	COD, S, NO _x	P _{COD} < 1,5 P _S < 1,5 P _{NOX} < 1,5	To simplify the calculation method	To facilitate the applicant
		P _{TOT} < 3	To include the parameter phosphorus (P)	To supervise water pollution
	AOX	0,25 kg/ADT for each pulp	To lower the current limit on pulp; To impose limit both to the single pulp and to the pulps mix	To improve the current criterion
	CO ₂	1000 kg/t for integrated paper mills and 1100 kg/t for non integrated paper mills	To lower the hurdles	Current limits are easy to reach
			To use National Electricity Conversion Factors to calculate the CO ₂ emissions from "grid electricity use"	To be in line with other policies on Carbon foot-printing that favour low CO ₂ emissions technologies for the electricity production.
			To exclude the amount of green energy purchased from the calculation of CO ₂ emission	To promote the use of electricity coming from renewable sources

Criterion 2. – Energy use

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

ENERGY USE	EUROPEAN NATIONAL LABELS			
	Eco-label	Nordic Swan	Blauer Engel	DGQA
	 a) electricity: Pe < 1.5 b) fuel : Pf < 1.5	 a) electricity: Pe < 1.75 c) Ptot = (Pe + Pfuel) / 2 < 1.5	 n.a.	 n.a.

The current criterion can be divided in two sections concerning the electricity and the fuel consumption related to the pulp and paper production.

The producers have to assess their energy use **expressed in term of points (P)** by a specific calculation method and they have to refer to the table with a list of reference values.

Section (a): Electricity

Some comments highlight that the current calculation method is quite complicated and asked for a **simplified method**.

Section (b): Fuel

As for the electricity, some stakeholders commented that no changes in the fuel consumption reference values seem necessary.

The calculation method is seen by most of the stakeholders as quite complicated. A **simplification** has to be considered.

Some others suggested instead to lower the hurdles for both the electricity and fuel use, because the current limits are too easy to reach.

Some problems in the allocation of the consumption emerged in case of “integrated mills”: the criteria, concretely, consider only the case of “non integrated” paper mills, giving different reference values for the pulp and the paper production, but do not contemplate the case of integrated production, therefore this might result in different approaches in calculating P_e and P_f for integrated mills.

Considering the results for fuel and energy consumption emerging from the graphics in Appendix 4.1/ 1st Background doc , the reference values adopted seem already rather strict both for pulps and for paper production (coated and uncoated) and, therefore, there would seem to be apparently no reason for a lowering of them.

Calculation Formula

The same consideration made for the “emission to air and water” calculation formula can be made in this case. An error leads to a too complicated formula.

$$P_{E, pulp} = \sum (p_i \times E_{pulp, i} / E_{reference, pulp})$$

should probably have been:

$$P_{E, pulp} = \sum (p_i \times E_{pulp, i}) / E_{weighted\ reference, pulp}$$

where $E_{\text{weighted reference, pulp}} = \Sigma (p_i \times E_{\text{reference, pulp}})$

1ST AHWG PROPOSALS

The formula in the criteria text has to be modified and corrected as follow:

$$P_e = \frac{\sum_{i=1}^n [pulp, i \times E_{pulp, i}] + E_{paper}}{\sum_{i=1}^n [pulp, i \times E_{ref pulp, i}] + E_{ref paper}}$$

It has to be considered that the modification proposal will produce higher values compared to those obtained using the current criteria formula. And this probably confirms that a further lowering of F_{ref} and E_{ref} could not be appropriate at this stage.

About the problem of the energy consumption allocation in case of integrated production of pulp and paper (since also in integrated paper mills it is possible to have separate consumptions of Electricity and Fuel), maybe the following approach can be used:

- 1) the electricity and fuel consumptions of pulps and paper will be used separately in the above mentioned formula to calculate P_e and P_f , and for the paper mill consumption an average value will be considered (Note: this statement reflect exactly what is written in the formula and it will be not reported in the Draft Criteria to avoid to be redundant);

- 2) In case of integrated mills, due to the difficulties in getting separate emission figures for pulp and paper, if only a combined figure for pulp and paper production is available, the emission values for pulp(s) shall be set to zero and the figure for the paper mill shall include both respective pulp and paper production.

Moreover by using the User's Manual formula (the simplified one we are proposing above), in both cases, 1 and 2, results for P_e and P_f are the same (using the current criteria formula instead option 2 would always lead to higher P_e and P_f than option 1), and this would prove that this simplified formula is to be preferred anyhow.

The kind of approach to follow in these cases, anyway, has to be specified in the user manual, rather than in the criteria text.

2nd AHWG HIGHLIGHTS

The proposal to modify the current formula as above explained has been commonly accepted by all the stakeholders. No other comments or proposals were made by any of the participants.

Table 3.9 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Sodra Cell	Energy criterion	It should be clarified that CTMP pulp is regarded as mechanical pulp, then it would be appropriate to write: Mechanical pulp including CTMP in the Table of reference values for electricity and fuel.
	UPM	Energy criterion	Correction to the criterion text are proposed, in case of integrated mills, about the formula application. (see Draft Criteria for more information)

Table 3.10 - Review table for criterion 2

Criterion	Theme	Existing requirements	New requirements proposal	Motivation
Energy use	Electricity	$Pe < 1,5$	To simplify the calculation method	To facilitate the applicant
			To lower the hurdles	Current limits are too easy to reach
	Fuel (heat)	$Pf < 1,5$	To simplify the calculation method	To facilitate the applicant
			To lower the hurdles	Current limits are too easy to reach
	Reference values table	-	To specify that the reference values for Mechanical Pulp are valid for CTMP also	Lack of information

Criterion 3. – Fibres - Certified Forest Management

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

		EUROPEAN NATIONAL LABELS			
FIBRES	Eco-label	Nordic Swan	Blauer Engel	DGQA	
					
	10% from certified forests	20% from certified forests or 75% recycled (not mandatory) or combination of both.	100% recycled fibres	90% recycled fibres (not mandatory)	

In the current criteria, *at least 10 % of virgin wood fibres from forests shall come from certified managed forests in order to implement the principles and measures aimed at ensuring sustainable forest management.*

“For those virgin wood fibers from forests that are not certified as being from sustainably managed forests, the applicant shall provide the appropriate declarations, charter, code of conduct or statement, verifying that the above requirements are met.”

Due to some comments, the percentage of the certified wood could be increased to 30-50%. On the other side, some stakeholders think that this increase sounds like a too big jump from the current 10% and that 20 % could be more acceptable like it happens in the current Nordic Swan criteria.

It was also suggested that the figures could be based on a certified “chain of custody” for a better traceability chain of the wood.

About the uncertified wood, it seems necessary to make a clarification about the current declaration requested and also to prohibit the use of wood from controversial sources (as done for the “wooden furniture”). The system of “chain of custody” could also act as a proof that requirements for non-certified wood are met.

Table 3.11 - Review table for criterion 3

Criterion	Theme	Existing requirements	New requirements proposal	Motivation
Fibres- Forest Certified Management	Wood fibres from certified forests	10% of virgin wood from certified forest	To rise the hurdle to: 30-50%	To widen the percentage of raw materials certified
	Fibres from uncertified forest	A declaration is requested	More clarifications about the declaration to be provided and to introduce a certified system to manage the requirements for uncertified wood	To standardize the requirements
	Recycled content	None	To add a minimum mandatory percentage of recycled fibers content in the product	To increment and diffuse the paper recycling and the use of recycled material

The following hot spots have to be considered for the technical revision:

- The criterion on certified fibres should not be separated from the one on recovered fibres.

Some proposals ask for setting of a minimum amount of recycled fibres “AND” certified fibres for the remaining percentage of materials used.

Other asked to leave to producers the possibility to either choose to use certified fibres “OR” recycled fibres.

- In order to have recycled fibres available, there must be also a production of paper from virgin fibres since fibres cannot be recycled indefinitely.

Some stakeholders underline that Ecolabel should promote balanced use of fibres, not to discriminate use of renewable and recyclable fresh fibre.

In some cases, the effect would be negative for the environment as more bleaching and flotation would be needed for higher paper qualities (see WP1 Final report “LCA comparison”; chapter 4.7).

On the other hand it should be also considered that:

- Copying paper is one of the fastest growing products in paper use and waste of copying paper in offices is huge (40% of office paper end in the bin at the end of the day²¹). Behavioural research for the printer manufacturer Xerox found office workers throw away 45 % of everything they print within a day, equivalent to more than a trillion pages every year ;
- Additionally the potential for recycled fibers is still huge in Europe with a strong increase of the amount of recovered paper on the European market;
- Recent news on collapsing recycling markets (because of less demand from abroad) are another strong argument that should push the European recycling market and to achieve further promotion of recycled fibers through the Ecolabel.

On this points some other stakeholders have underlined that, since the Ecolabel is supposed to relate to circa 10/20% of the market and the problem we have in Europe, as acknowledged also on page 16 (“The key issue is recyclability”), is the amount of office paper that is not recycled, then waste paper needs to be recycled, but this will only happen if the consumer behaviour doesn’t change. The goal of the Ecolabel is helping consumers make better environmental choices. So these stakeholders see the label as therefore having a key role in encouraging consumers to buy recycled, which will have the effect of driving demand for recovered office paper which will in turn encourage greater recycling of the vast quantities of office paper that are currently being land-filled, incinerated, etc.

The WRAP report on the environmental benefits of recycling²² is useful for this topic.

Regarding certification schemes it has to be noted that in the last years the major improvement has occurred in the amount of certified “Chain of Custody” systems more than in the “Forestry Certification” ones. A Chain of Custody system verifies the amount of certified fibre and ensures the legality of the remaining non-certified fibres.

On the basis of these considerations it seems to be necessary to find a solution requiring a minimal percentage of fibres that can be “certified” or “recycled”, remaining the oblige for the 100% chain of custody certification for the remaining virgin fibres.

Comparison with other EU Ecolabel criteria for Paper

The principal reference is the criteria for Tissue²³ paper.

Tissue paper (2009/568/EC)

²¹ Xerox research: The Guardian, 14/10/2007. “Britain’s trillion page mountain stacks up”

²² www.wrap.org.uk/downloads/Recycling_LCA_Report_Executive_Summary_Sept_2006.399df719.2839.pdf

²³ Revision process concluded: 2009/568/EC.

a) *The pulp and paper producer/s shall have a policy for sustainable wood and fibre procurement and a **system to trace and verify the origin of wood** and tracking it from forest to the first reception point.*

...and:

b) *The fibre raw material in the paper may be recycled or virgin fibre. **50% of any virgin fibre must, however, originate from sustainably managed forests** which have been certified by independent third party schemes fulfilling the criteria listed in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU and further development thereof.*

Point a) in practice, means that the producers shall demonstrate their compliance with the principles required by a certification scheme like a Chain of Custody (although there is not explicit request for this in the “assessment and verification”);

Point b) instead refers to third part certification of “Forest Management”, such as the abovementioned FSC, PEFC, etc...

1ST AHWG PROPOSALS

The references and measures that shall guarantee the social, economic, ecological, cultural principles of sustainability and to which the requirement must be inspired, are:

- a) The Pan-European Operational Level Guidelines for Sustainable Forest Management (Lisbon Ministerial Conference on the Protection of Forests in Europe (2 to 4 June 1998));
- b) The UNCED Forest Principles - Rio de Janeiro, June 1992 (Outside Europe);
- c) The Criteria or Guidelines for Sustainable Forest Management, as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).

Regarding “Legal timber” then it is important to refer to the FLEGT²⁴ (EU Action Plan for Forest Law Enforcement Governance and Trade) –Regulation 2173/2005.

According to the previous considerations²⁵ and to the comments received during the first year of consultation with the stakeholders, the aim of the first Draft Criteria Proposal is to find a suitable and commonly shared method to promote certified fibres as well as recycled ones.

²⁴ http://ec.europa.eu/development/policies/9interventionareas/environment/forest/flegt_briefing_notes_en.cfm

²⁵ See also chapter 2.5 “Sustainable forest management”

What is here proposed is a method which leaves the applicant the possibility to choose in which way to comply with the criterion: whether providing proof that the fibres originate from certified / managed forest or using recycled raw materials or a combination of both.

A minimum percentage (30% or 50%) should be achieved with a combination (in mass) of recycled and third party certified fibres.

For the remaining virgin wood used, it should come from forests that are managed so as to ensure sustainable forest management (e.g.: FSC and PEFC “controlled wood” certification could be a proof of compliance with this requirement) and/or a system to trace and verify the origin of wood and tracking it from forest to the first reception point should be required (e.g. CoC certification), for the legality of the timber a Flegt licence could be requested..

2nd AHWG HIGHLIGHTS

From the meeting, it emerged the necessity to harmonize the criterion with the newly approved versions of other EU Ecolabel product groups on paper (tissue paper 2009/568/EC).

From the discussion made during the II AHWG (see Minutes of the 2nd AHWG Meeting²⁶), a criterion requiring the complete traceability of the virgin fibres (CoC requirement in the “assessment and verification”) plus a certain % of Sustainability Management Certified virgin fibres is required.

Most of the participants did not agree with the inclusion of a minimum limit to the percentage of recycled fibres in the product, but everyone agreed that the % of use of recycled material will not be limited by the application of the criterion.

Some Competent Bodies (UK)²⁷ and the Environmental and Consumer associations support a high percentage of recycled content in the product (70%-100%): they recall the Czech Presidency paper “The fall in demand for recycled materials - Information from the Presidency²⁸, stating that *“In order to ensure recycling takes place, especially at the present time, there needs to be minimum amounts of recycled content set for various manufactured products, in order to stimulate market demand. One of these products should be paper. We therefore support the setting of at least a minimum recycled content.”*

Other stakeholders and CBs, instead, push to leave the applicant the possibility to use recycled/virgin fibres, but without imposing a minimum limit for recycled content.

Most of AHWG participants agreed with the requirement of a fully CoC certification for the total amount of virgin fibres used in the product awarded by the EU flower.

²⁶ Minutes of the 2nd AHWG Meeting on Copying and Graphic Paper (Rome, 27th March 2009)

²⁷ <http://www.defra.gov.uk/sustainable/government/what/priority/consumption-production/quickWins/paper.htm>

²⁸ Brussels, 25 February 2009 – no. 6918/09, ENV 144 available to <http://register.consilium.europa.eu/pdf/en/09/st06/st06918.en09.pdf>

Some industry representatives sustain that it is not necessary to have a minimum percentage of certified fibres in the product in addition to the CoC certification: the exact amount of certified fibre in ecolabel products is irrelevant, because CoC certification ensures that at least the equivalent amount of Chain of Custody certified fibres is brought into the fibre supply chain.

Despite this consideration, some participants suggest to impose anyway a minimum percentage of certified raw material: 70% for EEB and BEUC, 50-70% for Denmark and International Paper, 30% for Finland and Sweden and 10% for Portugal.

Furthermore, about the need of other requirements to avoid wood originating from controversial and unacceptable sources, it has been pointed out that when a mill has a CoC, there's automatically a traceability of origin and legality of the wood supplies even for the non-certified fibers. So there's no need to add a new statement related to the "unacceptable origins".

It has still to be decided if the requirements on the Sustainable Forestry Management Certification and the CoC certification will be directly applied to the Eco-labelled product to ensure that the materials which the certificates are referred to, are correctly used "in the product" and not for other productions, or "at the mill".

Many comments received during these months suggest to adopt this last approach, because, also using the two major forestry certification scheme (FSC and PEFC) it is not possible to have the exact amount of actual presence of Chain of Custody harvested fibres in a specific product (see also comments at page 16 of this document).

Furthermore, in the User's manual, it will be specified that fillers and other chemical additives have not to be considered in the calculation of the amount of materials subject to the criterion requirements: only fibers have to be taken into account.

Table 3.12 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Swedish CB	Criterion verification	It should be clarified what 50% certified fibres in the product exactly means: if it's related to the paper product or to the producer that have to allocate the share to the certified fibres in the pulp or in the wood raw material to their deliveries of pulp and paper. Specify if the percentage of certified fibres has to be calculated on a monthly basis or on an annual average.
		Certified percentage	50% certified wood is too high. A total traceability could imply the study of new allocation methods and the increase of the transports, due to the low presence of certification in Europe: for these reasons 30% would be enough.
	Assocarta	Certified percentage	Assocarta supports the initiatives to enhance the use of recycled content. Disagree with a criterion referring to the unacceptable origins of wood including the phrases: <ul style="list-style-type: none"> – “forests that are being converted from natural and semi-natural forests to plantation or non-forest use.” – “protected areas or areas in the official process of designation for protection,” without excluding wood logged in compliance to official logging licenses on those areas.
		Portucel Soporcel	Certified percentage
	CVG	Certified percentage	Need for a redefinition of the criterion in such a way that presence of x % of CoC pulp is no longer a requirement. The producers need some freedom to be able to optimise their pulp composition for all the

	Who	Topic	Comments / Proposal
			<p>other criteria of the ecolabel.</p> <p>They propose that ecolabel certified products are always sold with a full credit (i.e. transfer of 100 % of the purchased credits to the next owner), instead of a minimum of 70 %, which is possible at present.</p>
	M-real	Certified percentage	<p>They suggests that a level of 30% certified virgin fibre in EU Ecolabelled products would be far more realistic.</p> <p>The CoC certification should be referred to the mills and not on the final product.</p>
	International paper	Certified percentage	<p>Agree with the 50% of certified fibres, and suggest to increase it even more to 70% to get alignment with the forestry labels.</p> <p>No minimum of certified fibers at the mill should be imposed. (??)</p>
	Stora Enso	Certified percentage	<p>Stora Enso does not support the proposed increase of the forest certification percentage. Instead they support the proposal to introduce criteria for fibre traceability in mills and wood procurement organization's Chain of Custody systems</p>
	Sodra Cell	Assessment and verification of certified fibres	<p>Agrees with the proposed 50% certified fibres but it is suggest to better define the assessment and verification of the certified fibres to the product.</p> <p>PEFC and FSC have a credit system therefore only taking the yearly average for a mill or a product gives a risk that a product labelled with the EU Ecolabel does not contain any certified fibres at all.</p>
	UK CB	Certified percentage	<p>A requirement for a minimum percentage of recycled content should be included. 70%-100% of recycled fibres (state a minimum value of recycled fibers); Certified values higher than 50% should be defined.</p>
	UPM	Recycled content - Certified percentage	<p>UPM proposes 25-30 % limit value for certified fibers and/or recovered fibre at the mill.</p> <p>Chain of Custody should be required as a tool to verify the amount of certified fibre at the mill.</p> <p>Neither FSC nor PEFC credit calculation rules shall be allowed to be used, but mill/paper machine line average value should be used.</p>
	EEB and BEUC	Recycled content - Certified	<p>80% minimum recycled; 100% Certified products with at least 70% fibers certified</p>

	Who	Topic	Comments / Proposal
		percentage	
	BURGO	Certified percentage	Agrees with the proposed 50% certified fibres.
After October, 9th 2009	German CB	Fibres Criterion	Agrees with the proposed 50% certified fibres, moreover suggest to calculate the percentage of certified/recycled fibres as annual average to allow higher flexibility to the mills
	Austrian CB	Fibres Criterion	Supports the proposal of 50% certified fibres and propose to raise this percentage up to 70% within the period of validity of the criteria, like in the Ecolabel criteria for "wooden floor coverings" and "wooden furniture"
	Dutch CB	Fibres Criterion	Proposes that 70% shall be third party SFM certified fibres and/or recycled fibres. This requirement implies that recycled fibres are considered "equal" to SFM certified fibres. The Dutch CB suggests to thoroughly what is meant with "certified fibres" and "recycled fibres" No minimal percentage for exclusively the certified virgin fibres
	Metsaliitto	Fibres Criterion	Support the suggest to align to the Tissue Paper new criteria, but lowering the % of certified fibres to 30%. Therefore they support the proposal that certified CoC should be provided

3rd AHWG HIGHLIGHTS and other comments

The discussion about the Fibres Certification requirement has been very long and complicated. At the end a shared approach has probably been reached with the Commission proposal to align the criterion with the Tissue paper one, exactly like the Intersevice Consultation has done at the end of the revision process (Commission comment)²⁹.

As already done for the Wooden Floor Coverings Criteria, a dynamic approach is proposed about the requirement for a minimum percentage of recycled fibres:

- 30% until June 2011;
- 50% from July 2001.

²⁹ For more information about the discussion, please, see the minutes to the 3rd AHWG meeting, pages 8-9.

Any further verification requirement needed to support the criterion shall be clearly specified in the User's Manual.

Furthermore, as a consequence of the introduction of the newsprint paper in the Product Group definition, a minimum recycled content for this kind of paper should be defined: the proposals made during the meeting go from the 70% (UPM) to the 100% (UK).

At the EUEB meeting many participants agreed with the last proposal made, but their concerns about the percentage of Certified Forests still remains: many stakeholders (Sweden, Finland, Norway, Portugal) continue asking lower values because they state that 50% is at the moment very difficult to be reached in two years (position confirmed by CEPI's comments to the 3rd Draft and by many paper producers). On the other hand, some other CBs, like UK, Denmark, Germany, Austria, The Netherlands and also EEB and BEUC would support higher percentages of certified/recycled fibers (50% -100%).

About the date until/from which the percentage increase is foreseen it will be proposed a more generic deadline, i.e. two years from the criteria entry into force.

Also the minimum recycled percentage for newsprint paper has been debated and some participants have proposed to integrate it in a more general requirement, giving the possibility to sum the amount of certified and recycled fibers into the same requirement to reach an unique percentage value (see proposal "b" made in the 2nd Draft Criteria Proposal update). Some comments (Cepi) would like to see no different requirements for newsprint paper (no fixed amount of recycled fibers) but to apply the same general requirements done for the other paper grades.

Some comments received after the EUEB meeting propose the same approach also for all the other paper grades (PEFC comments).

Scandinavian countries have stated that 80% recycled fixed content for Newsprint paper is a too high goal impossible to reach in their markets.

Some other comments instead would like to see Newsprint paper entirely done with recycled fibers.

Furthermore the Danish CB has also asked to take into consideration the possible exclusion of GMOs fibers.

Criterion 4. – Hazardous chemical substances

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

HAZARDOUS CHEMICAL SUBSTANCES	EUROPEAN NATIONAL LABELS			
	Eco-label 	Nordic Swan 	Blauer Engel 	DGQA 
	a) chlorine: no bleaching gas; b) APEOs: banned c) Residual monomers < 100ppm d) Surfactans in de-inking formulation:biodegrad. e) Biocides : no bio-accumulative f) Azo-dyes: no aromatic amines in 2002/61/CE g) Dyes: no environmental risk phrases h) Pigments : no Pb,Cu, Ni, Cr,Al i) Ionic impurities: limits	a) chlorine: no bleaching gas b) APEOs: banned c) Residual monomers < 100ppm d) Surfactans in de-inking formulation:biodegrad e) Biocides: no bio-accumulative f) Azo-dyes: no aromatic amines in 2002/61/CE g) Dyes: no environmental risk phrases EDTA : to supervise	a) Chlorine: banned b) APEOs: banned e) Biocides: banned for Annex II EC 2032/2003 f) Azo-dyes: banned aromatic amines in 2002/61/CE g)Dyes: no risk phrases for human safety h) Pigments: no Pb,Cu, Ni, Cr,Al Others: Formaldehyde < 0.5 mg/dm ² PCP < 0.15 mg/kg Glyoxal: NO Bleaching optics: NO EDTA: NO COV): to supervise	a) Bleaching optics: banned b) EDTA: banned c) APEOs: banned d) Heavy metals: banned Cd, Cr, Hg, Pb, Ni, Zn.

The criterion states that:

The applicant shall supply a list of chemical products used in the pulp and paper production, together with appropriate documentation (such as MSDS³⁰). This list shall include the quantity, function and suppliers of all process chemicals used.

The criterion has nine sections:

Section (a) Chlorine

The chlorine gas used as bleaching agent is banned.

Section (b) APEOs

APEOs can't be added to cleaning chemicals, de-inking chemicals, foam inhibitors, dispersants or coatings.

Section (c) Residual monomers

³⁰ MSDS: Material Safety Data Sheet

The quantity of residual monomers can't exceed 100 ppm; for acrylamide the maximum value is 1000 ppm.

Section (d) Surfactants in de-inking formulations for return fibres

100g/ADT is the hurdle for biodegradable surfactants.

Section (e) Biocides

The use of biocides with bio-accumulative components is prohibited.

Section (f) Azo-dyes

Azo-dyes cannot be used. For the specific list of aromatic amines see the Commission Decision 2002/741/CE.

Section (g) Dye stuffs

Commercial dye formulation with specific risk phrases don't have to be used (please see the Commission Decision 2002/741/CE).

Section (h) Metal complex dye stuffs or pigments

Dyes or pigments (that are based on lead, copper, chromium, nickel or aluminium) can't be used.

Section (i) Ionic impurities in dye stuffs

For the specific limits please see the Commission Decision 2002/741/CE.

It was suggested to specify what is meant for "**process chemicals**", in order to make clear which chemicals substances have to be included in the list (i.e.: all cleaning agents?).

The same for the term "process chemicals", that could be substituted by "all substances used in the production process".

A revision of the *assessment and verification* is required. In particular, it is suggested to delete the request of declarations of compliance with the requirements.

Also the necessity to revise all the requirements on chemicals to comply with the more recent normative (e.g: REACH, etc...) has emerged.

During the 1st AHWG some stakeholders demanded that only totally chlorine free (TCF) paper can be awarded with the EU Ecolabel together with the introduction of an additional requirement for EDTA and for optical brightener limitation. But some other stakeholders, as already mentioned, remarked that even if TCF bleaching doesn't cause AOX emissions it nevertheless uses more energy, wood and chemicals for tonne of pulp than ECF.

Some stakeholders also required the restriction to the use of chemicals that may fulfil the criteria for Substances of Very High Concern in REACH (CMR, PBT, vPvB, endocrine disruptors).

1ST AHWG PROPOSALS

In many cases some producers add fragrances and aromatic essences to their product (copying and/or graphic paper). For this reason it could be significant the introduction of a criterion to regulate the use of these substances, as already made in the EU Tissue Paper Criteria (ref. EU Ecolabel Tissue Paper Criteria Proposal, criterion 4 (f) , maybe updating it with comments made by some CBs (DK) aiming at restricting the use of unnecessary substances/preparations to those that don't cause any health or environmental risk.

2ND AHWG HIGHLIGHTS

Fragrances will be excluded from the application without including a specific criterion, but adding a specific mention in the product group definition.

As suggested by the Commission, the use of hazardous substance like CMR (Carcinogenic Mutagenic Reprotoxic) and PBT (Persistent, Bioaccumulative and Toxic) is now prohibited according to the new Ecolabel Regulation (cfr. Point 7 and 8 – Article 6 “General requirements for the Ecolabel criteria”³¹):

Article 6 (7): *“The Ecolabel may not be awarded to goods containing substances or preparations/mixtures meeting the criteria for classification as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR), in accordance with Regulation (EC) No 1272/2008, nor to substances referred to in Article 57 of Regulation (EC) No 1907/2006 (REACH)³².”*

EEB and BEUC are in favour of the total prohibition of the OBAs (Optical Brightening Agent) and EDTA.

The industries representatives underline also that the use of OBA's is strictly related to the consumer demand for brightener paper, and that restricting the use of optical brighteners could result in increased effluent loads originating from increased use of bleaching chemicals, which would be necessary in order to reach the same whiteness levels. Due to these reasons, there is no indication even in the BAT reference documents towards requirements for reduced use of optical brighteners.

³¹ European Parliament legislative resolution of 2 April 2009 on the proposal for a regulation of the European Parliament and of the Council on a Community Ecolabel scheme (COM(2008)0401 – C6-0279/2008 – 2008/0152(COD))

³² The article 57 of REACH includes substances classified as PBT and vPvB

About EDTA, some stakeholders have underlined that it is already treated in the “Environmental Quality standard for Water Policies” Directive, but no reference values or limitations are provided. Furthermore, at the moment it seems that no techno-economically viable biodegradable complexing agents are available yet.

In the Appendix at the end of this document two synthetic reports describing the state of art about OBAs (Appendix 4.1) and EDTA (Appendix 4.2) current situation are provided.

Considering the outcomes of the consultations with the stakeholders and with some experts and the pictures of the situation made in the appendixes, it emerges that, probably a proposal for the exclusion or limitation of these substances should be based on more specific studies and more reliable data.

Regarding the legal reference used for the point (f) Azo dyes it has to be pointed out that the Directive 76/769/EEC has been replaced from 1st June by annex XVII of the EU Regulation 1907/2006 (REACH).

In the new criterion a section will be dedicated to the translation of the classification made for a substance or a mixture under Directive 67/548/EEC or Directive 1999/45/EC (“R” and “S” phrases), respectively, into the corresponding classification under the *Regulation 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending regulation (EC) no 1907/2006, introducing the new Globally Harmonised System of Classification and Labelling of Chemicals* (i.e.: the GHS).

In order to better comply with the criterion text (*“the total quantity of residual monomers (excluding acrylamide) that are assigned or may be assigned any of the following risk phrases (or combinations thereof)”*) the R phrases previously cited coupled (R50/53, R51/53, R52/53) have been splitted and reported separately.

The rules followed for the translation can be found in the ANNEX VII to the Regulation 1272/2008. Below a proposal for the texts to be added in the new criterion:

1. Point (c) Residual monomers:

[...]

Alternatively, classification may be considered according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. In this case no substances or preparations may be added to the raw materials that are assigned, or may be assigned at the time of application, with and of the following hazard statements (or combinations thereof): H350, H340, H350i, H400, H410, H411, H412, H413, H360F, H360D, H360FD.

2. Point (g) Dye stuffs:

[...]

Alternatively, classification may be considered according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. In this case no substances or preparations may be added to the raw materials that are assigned, or may be assigned at the time of application, with and of the following hazard statements (or combinations thereof): H400, H400-H410, H411, H412, H413.

Table 3.13 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Swedish CB	HCS criterion	Would like to ban all chemical product classified as Environmentally Harmful (R 50 : R 59).
After October, 9th 2009	Germany CB, Danish CB, Dutch CB	HCS criterion	Suggest to modify the criterion following the example of the Wooden Floor Coverings

3rd AHWG HIGHLIGHTS and other comments

Some CBs suggest to modify the current criterion to harmonise it to the new regulation including a band of “Substances of very high concern”, like already done for the Wooden Coverings product group. This would mean to set a general requirement at the beginning of the Criterion excluding the following R-phrases:

R 40 (limited evidence of carcinogenic effect)

R 43 (may cause sensitisation by skin contact)

R 45 (may cause cancer)

R 46 (may cause heritable genetic damage)

R 49 (may cause cancer by inhalation)

R 50 (very toxic to aquatic organisms)

R 51 (toxic to aquatic organisms)

R 52 (harmful to aquatic organisms)

R 53 (may cause long-term adverse effects in the aquatic environment)

R 60 (may impair fertility)³

R 61 (may cause harm to the unborn child)

R 62 (possible risk of impaired fertility)

R 63 (possible risk of harm to the unborn child)

R 68 (possible risk of irreversible damage)

so that the current points *c) residual monomers* and *g) dye stuffs* are automatically covered.

The other points not linked to R-phrases shall remain unchanged.

Moreover Denmark suggest to erase the exception for “Copper phthalocyanine dyes or pigments”. If the purpose of the exception is to allow specific blue shades it is our opinion that the exception is not justified when looking at the scope of this criteria “paper for printing and copying”.

This last proposal concerned Industries and CBs because it seems to be, sometimes, too strict if applied in an extensive way to all the chemicals used in the pulp and papermaking. For example, many wet strength agents would be banned because typically assigned to R52/53 (Swedish CB comments).

A final solution shared with the EU Commission could be to leave the current criterion as it is: in any case, when the new regulation will be in force, SVHC, CMR and PBT will be however banned from any kind of application.

As suggested by the Danish CB, the list of R-phrases banned from application in dye stuffs (and, in addition: colorants, surface-finishing agents, auxiliaries and coating materials) has been expanded making reference to Blauer Engel Criteria (RAL-UZ 14: criterion 3.10). The ban of the following R-phrases, in addition to the current ones, is proposed:

R 40 (limited evidence of carcinogenic effect)

R 43 (may cause sensitisation by skin contact)

R 45 (may cause cancer),

R 46 (may cause heritable genetic damage),

R 49 (may cause cancer by inhalation)

R 60 (may impair fertility)

R 61 (may cause harm to the unborn child)

R 62 (possible risk of impaired fertility)

R 63 (possible risk of harm to the unborn child)

R 68 (possible risk of irreversible damage).

About the Acrylamide (criterion b) the concentration maximum limits has been set to 700 ppm (calculated on the basis of their solid content) instead of the previous value of 1000 ppm as proposed by Dk.

About Metal complex dye stuffs or pigments (criterion h): the permission to use Copper phthalocyanine dyes or pigments, despite similar substances have been banned, is justified by the fact that the Copper phthalocyanine is widely used in industry (textile and paper) and is not considered to be a hazardous substance under OSHA's Federal Hazard Communication Standard 29 CFR 1910.1200 and is not included in the list of substances banned in point a), 3rd draft. Moreover, most labels allow their use.

Criterion 5. – Waste management

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

WASTE MANAGEMENT	EUROPEAN NATIONAL LABELS			
	Eco-label	Nordic Swan	Blauer Engel	DGQA
				
	Yes	Yes	n.a.	n.a.

The criterion states that:

“The waste management system shall be documented or explained in the application and include information on at least the following points:

- *procedures for separating and using recyclable materials from the waste stream,*
- *procedures for recovering materials for other uses, such as incineration for raising process steam or heating, or agricultural use,*
- *procedures for handling hazardous waste (as defined by the relevant regulatory authorities of the pulp and paper production sites in question).*

It was suggested to facilitate the applicant **providing ISO 14001 or EMAS** certification instead of the current declaration of compliance with the criterion.

On the other hand it was also suggested to delete this criterion because not so relevant, in order to simplify the Ecolabel system.

Table 3.14 - Review table for criterion 5.

Criterion	Theme	Existing requirements	New requirements proposal	Motivation
Waste management	Waste management	To provide a declaration with the description of the waste management	To provide any declaration	To facilitate the applicant
			In place of current declaration, to provide ISO 14001 /EMAS certification as proof of compliance with the criterion	To facilitate the applicant and the assessors

Considering the large amounts of recyclable/reusable materials produced by pulp/paper mills, it does not seem that the management of this environmental aspect is “not relevant” at all.

Nevertheless, also if the waste management is almost always considered as one of the main environmental aspect to be considered for the establishment of an Environmental Management System, it is not a mandatory request for these kinds of certification. Starting from this preamble, thus, providing an ISO14001 or EMAS cannot be considered as a sufficient condition for considering the criterion complied.

The best way to verify the requirement is still to ask for the description of the “waste management procedures” specified in the criterion. In case a company is ISO or EMAS certified, it will be easier for them to provide the required documentation.

Criterion 6. – Fitness for use

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

FITNESS FOR USE	EUROPEAN NATIONAL LABELS			
	Eco-label	Nordic Swan	Blauer Engel	DGQA
				
	Yes	n.a.	n.a.	n.a.

The criterion states that the product shall be fit for use and “*the applicant shall provide appropriate documentation and/or test results*”

It was suggested to modify this criterion because it has **no specific relevance for the paper products**.

However, from other comments it doesn’t seem necessary to modify the criterion, because of its relevance.

BEUC-EEB want to keep the criterion and suggests to use DIN standards as the Blue Angel (DIN EN 12281: 2003 for use in copying machines, DIN 6738: 1999 for archiving).

2nd AHWG HIGHLIGHTS

EEB-BEUC ask again to make reference to the Blauer Engel DIN standard for copying machine.

In order to give higher relevance to the meaning of this requirement, in accordance to the scope of the Criteria that are specific “Copying and Graphic paper” it could be required, in the “Assessment and verification”, to provide appropriate documentation about the “fitness for use” of the product following the *European norm EN 12281 - Printing and business paper - Requirements for copy paper for dry toner imaging processes*.

In case of continuous papers the reference norm is the EN 12858 – “Paper - Printing and business paper - Requirements for continuous stationery”

Unfortunately the norm DIN 6738 is a German national norm, than cannot be applied at European level. The Criterion could however make reference to the equivalent European standard to define the requirements that the permanent paper designed for documents should have: the *EN ISO 9706 - Information and documentation - Paper for documents - Requirements for permanence*.

Table 3.15 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Portucel Soporcel	Fitness for use standards	Compliance with standards EN 12281, EN 12858 must be optional.
	CVG	Fitness for use standards	Suggest to add only one specific test method for permanent use (i.e.: EN ISO 9706).
	M-real	Fitness for use standards	M-real proposes that mills will guarantee the fitness for purpose of their products through vigorous checking of paper quality throughout their production process and on the end product instead of complying with the EN standards proposed in the Draft Criteria document. The documentation provided should be required to comply with the standard EN 45014 which provides general criteria for suppliers' declaration of conformity to normative documents. Paper made from recycled fibres has more difficulties to comply the standard EN 9706, but generally meet DIN 6738. M-Real suggests that this requirement will be changed to allow the use of either standard.
	Danish CB	Fitness for use standards	Agree with the new formulation of the criterion.
After October, 9th 2009	Metsaliitto	Fitness for use criterion	Suggests to remove the criterion because it has very little or not at all to do with environmental impacts

3rd AHWG HIGHLIGHTS and other comments

Many stakeholders underlined that the proposal made doesn't cover all the types of paper, especially after the inclusion of the new paper grades allowed by the 3rd criteria proposal.

While the Commission proposed to remove the criterion, the Italian CB, EEB-BEUC and some other stakeholders did not agree with this deletion, and proposed to adapt the current proposal by covering also those paper grades which would be excluded at the moment, allowing also other test methods in order to prove compliance with the criterion.

Portuguese CB correctly underlines that *“there are a large number paper types that can be submitted to the new Ecolabel decision for copy and graphic papers that are not covered by the scope of the standards EN 12281 and EN 12858: this is the case of coated papers, lightweight coated papers, offset papers, preprint papers, inkjet papers, publishing papers and educational papers.”*

Moreover, the standard EN 12281, was developed for an 80 grams and A4 size paper and there are different basis weights (like 70, 75, 90, 100, 110, 120 and even higher basis weights) and sizes (A3, SRA3, A3+, letter, legal) for office usage, which can apply for Ecolabel, and for which the stated standard is not suitable to verify the conformity with this criterion, namely the jam rate test.

Moreover there is a notorious difficulty to find, in some countries, accredited laboratories able to certify papers according to the standards EN 12281 and EN 12858.

Thus, the producers should have several alternatives to show the fitness for use of its paper products, foreseen for all type of papers included in the Ecolabel Decision, such as providing appropriate documentation demonstrating the paper quality (e.g., declaration in compliance with EN 45014). Someone proposes also that market studies executed by an independent body demonstrating the product fitness for use and customer satisfaction (as it is foreseen in some Ecolabel decisions for other product groups) could be enough to comply the criterion.

Criterion 7. – Information on the packaging

Criteria for copying and graphic paper: comparison among the main EU ecological labels.

USER INFORMATION	EUROPEAN NATIONAL LABELS			
	Eco-label	Nordic Swan	Blauer Engel	DGQA
				
	Yes	n.a.	n.a.	n.a.

The criterion states that the following text must appear on the Ecolabel product:

- *This product qualifies for the Flower because it meets requirements that, amongst others, limit emissions to water (COD, AOX), to air (S, NO_x, CO₂), and limits the use of energy, fossil fuels and hazardous substances."*
- *"For more information on the Flower, please visit the web-site: <http://europa.eu.int/ecolabel>" (*)*

- *"Please collect used paper for recycling".*
- *In addition, the manufacturer may also provide a statement indicating the minimum percentage of recycled fibres.*

Some comments received want a simplification of the communication message on the product packaging: they suggest to put just the Ecolabel logo and license number on the packaging without the current additional text.

Anyway the logo and the general rules for its creation are defined by the Ecolabel Regulation 1980/2000 – Annex 3³³ and they can't be changed just in single product groups Criteria.

The requirement to put on the packaging the % of virgin certified or recycled fibers, if a mandatory criterion on this issue were included in the revised criteria, was made, together with the proposal to add an information on the country of origin for fibers in the criterion.

Table 3.16 - Review table for criterion 7

Criterion	Theme	Existing requirements	New requirements proposal	Motivation
Information on the packaging	Information on the packaging	To put the logo, license number and Ecolabel phrases on the packaging	To add the % of recycled/certified fibers	More information to consumers
			To add the origin of recycled fibers	Information to consumers

2nd AHWG HIGHLIGHTS

As proposed in the 1st Draft Criteria and in accordance to the criteria scope (*Article 2*), the following sentence could be added to the current criterion: "Only sheets or reels of unprinted paper can bring the Ecolabel logo".

Many stakeholders insist for a simplification of the labelling rules, including only, for instance:

- The EU Ecolabel logo;
- The license number;

³³ Annex II in the new Ecolabel Regulation, in force after Autumn 2009.

- A link to Ecolabel and/or to company websites.

This solution is advocated in order to simplify the information directed to the consumer and to not create confusion providing too many writings on the packaging.

However the labelling rules are defined in the Ecolabel Regulation 1980/2000 and therefore cannot be changed within a single product group.

Table 3.17 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	CVG	Information on the packaging	In connection with criterion three for full adherence to the widely accepted Chain of Custody systems, a percentage could be printed on the packaging, based on mixed credit, mixed percentage, volume credit and similar systems. The company has to clearly state during the application which system is used and what the minimum transfer of credits (100% of less) is transferred to the next owner in the chain.
	International paper	Information on the packaging	Simplified labelling rules would be welcome, as the information on a paper ream is often translated in no less than 12 languages.

3rd AHWG HIGHLIGHTS and other comments

At the end of the discussion it has been decided that:

- The sentence “Only sheets unprinted can bear the Ecolabel logo” will be moved into the Article 2 (scope of the criterion);
- The reference to the Commission web site will be deleted (it will be included in the new Regulation);
- To delete the request on the origin and on the % of the fibers, although EEB and BEUC oppose to this deletion;

Criterion 8. – Information appearing on the eco-label

The criterion establishes that:

Box 2 of the eco-label shall contain the following text:

- "low air and water pollution
- low energy use
- harmful substances restricted".

As for the criterion 7, a simplification of the communication on the packaging is advocated, because, as suggested by some stakeholders, the consumers could be confused by too many written information.

2nd AHWG HIGHLIGHTS

During the 2nd AHWG discussion it was suggested to change the phrases “harmful substances restricted” to “**no harmful substances**” in order not to create worries in the final users, substituting them with a statement on “Sustainable Forest Management” (also depending on the final version of the criterion 3), possibly with the indication of the % of certified and/or recycled fibres .

Other instances

Some CBs and the consumers and environmental associations ask for further investigation on nanoparticles, but, as already explained in the “WP1 Paper Final Report” nanoparticles are not directly applied in the paper manufacture, also if pigment that have been modified using nanoparticles could be used.

It has to be underlined that, as the Commission explained, in absence of specific studies on this topic, it is not the EU Ecolabel the place to making these investigations.

Nanoparticles, then, have not been considered during this revision of the criteria, waiting that new and more detailed studies on the issue will be made for the next revision: at present there are no sufficient proofs and information to exclude or regulate the nanoparticles use adding a specific criterion on them.

Table 3.18 – Comments received after the EUEB meeting (September 23rd 2009)

	Who	Topic	Comments / Proposal
Before October, 9th 2009	Swedish CB	Information on the ecolabel	Remove the statement “no harmful substances”. There can never be a 100% guarantee that there are no harmful substances present, especially if the paper is made of recycled fibres.

3rd AHWG HIGHLIGHTS and other comments

At the end of the discussion it has been decided that the sentence “harmful substances restricted” will be changed in “**hazardous substances restricted**”.

The results of the “Analysis of emission and energetic consumption data” of 38 paper mills and 153 pulp producers provided in the 1st Background Report (version 13th March 2009- Appendix 4.1) have not been reported here because no further information and updates have been received by industries since the last AHWG (13th March 2009). For further information, please, refer to the above mentioned document.

4 Appendix

As consequence of the request of excluding or putting a limit to the use of certain chemical substances commonly used in the pulp and papermaking, two synthetic deepening on Optical Brighteners and EDTA have been carried out, in order to give a picture of the current International situation and knowledge about these chemicals.

4.1 OPTICAL BRIGHTENING AGENTS

Definition

The Optical Brightening Agent (OBAs), also called Fluorescent Whitening Agent (FWAs), are chemical substances used to enhance the brightener of textiles, detergents and paper manufactures. OBAs absorb light in the ultraviolet spectrum range and re-emit the light in the visible blue range. This results in a fluorescent effect with bright white in daylight masking the inherent yellowness of the raw materials.

OBAs can be classified, basing on structure and properties, into some 11 major chemical families, each containing numerous sub-families, hundreds of compounds, and thousands of different formulations. All OBAs are highly-substituted ring (aromatic) structures that contain many double bonds that can be activated by UV light³⁴. Brighteners mainly used in paper production are normally derivatives of 4,4'-diaminostilbene-2,2'-sulphonic acid. Optical brighteners may contain up to 30% organic bound nitrogen (urea)³⁵.

Uses

All modern laundry detergents contain FWAs to increase the perceived "whiteness". Correlated to this use FWAs is discharged in substantial quantities with household wastewater (Fay, Spong, and Alexander, 1995), and some studies states how Optical brighteners are removed from underground waters by adsorption onto soil and organic materials (Aley, 1991). This make OBAs less than benign from an environmental perspective. Although no reliable scientific literature has been found or put forward by stakeholders to demonstrate the toxicity of this substances, some US websites report that "many of the chemicals in this category are toxic to fish and other aquatic life. Some are also capable of causing mutations in bacteria"³⁶.

³⁴ Fluorometric Detection of Optical Brighteners as an Indicator of Human Sources of Water Pollution. Department of Crop and Soil Environmental Sciences Virginia Tech (VPI & SU).

³⁵ IPCC reference document BAT Pulp and Paper industry p. 447

³⁶ (<http://www.usawaterquality.org/newengland/Topics/hot/brighteners.html>).

In paper manufacture OBA's are added preferably in stock moreover they are also used in surface applications such as surface sizing and paper coatings. They are more effective in high bleached pulp and less effective in unbleached chemical pulp and mechanical pulp, because any material, as lignin, that absorbs ultraviolet light will lower the efficiency of brighteners. Typically in paper production their usage is 5-10 kg/ADt and retention poor at 50 - 90%. They are not biodegradable, but will adsorb partly to the sludge of the wastewater treatment plant: that which is released to water bodies will partially photo-degrade (only transformation of the chemical structure). Optical brighteners may contain up to 30% urea as a stabilising agent. When not accounted for, this may result in overdosing of nitrogen in the biological wastewater treatment plant.³⁷ Some producers are creating OBAs dedicated to recycling fiber, and special Urea free OBAs for paper use.

Optical Brighteners are serving as a useful tool to identify faulty septic systems, sewage exfiltration, storm drain cross-connections, and human/animal waste differentiation. Other fluorescent dyes have been used extensively for tracing surface water and groundwater because of their low detection limits, ease and economy of detection, availability and safety. By following the plume the optical brightener created, sources of bacteria, also released in ineffective sewage treatment, may be identified.

In some countries the use of OBAs is restricted for packaging in contact with food. The US EPA set the percentage of OBA in 0,015 by weight of polymer in contact with food³⁸, in 0,05% in all polymers by weight of polymers.

Issues related to OBAs use in Paper

Many paper makers suppose that optical brighteners interfere with permanence, because they can break down over time and can cause irregular yellowing of the paper (or the inkjet coating), or cause acidity in the paper, which can lead to a premature deterioration of the paper structure. In fact, the Library of Congress (USA) defines the stock composition of an archival paper to be OBA-free³⁹.

Some European OBA producers are able to offer several products containing REACH-registered brighteners. Extra EU producers and importers have pre-registered to REACH some OBAs products. It has to be highlighted that most of these products contain the Risk phrases R53 ("*may cause long-term adverse effects in the aquatic environment*").

OBAs and Eco-labels

In the table below a panoramic on the OBAs' state of art among the main ecological labels for paper is shown:

³⁷ Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Pulp and Paper Industry December 2001 p.447

³⁸ For further information see <http://www.epa.gov/EPA-IMPACT/1998/January/Day-23/i1539.htm>

³⁹ Available to <http://www.loc.gov/preserv/supply/specific.html>

EUROPEAN LABELS	Ecolabel 			Nordic Swan 	Blauer Engel 	DGQA 
	C&G	Tissue ⁴⁰	Printed			
<i>OBA prohibition</i>	NO	EN 646/648 (level 4 required)	NO	NO	YES (totally)	YES (totally)

Furthermore, the Optical Brighteners are banned from the following ecolabel product criteria:

- Ecolabel: Laundry detergent (criteria proposal February 2009)
- Nordic Swan: Laundry detergent and stain removers (valid until 2012)
- Nordic Swan: Laundry detergent professional use (valid until 2010)
- Blauer Angel: Printing Paper (January 2009)
- Blauer Angel: Paper towel (May 2009)

Risk Assessment: HERA Documentation

HERA (Human and Environmental Risk Assessment), the European industry project sponsored by the AISE and CEFIC (European Chemical Industry Council, <http://www.heraproject.com>) has produced a number of documents on human and environmental effects of detergent ingredients. The following reports on Fluorescent Whitening are publicly available.

- FWA-1 (CAS 16090-02-1) date 2004 (Draft version): More than 90% of this brightener is used in household detergents in concentrations ranging from 0,05 to 0,15%, and the balance in textiles and paper. The Risk Characterization Ratios (RCR) from monitoring data, HERA and available effects data are below 1 and therefore do not indicate a concern to any environmental compartment.
- FWA-5 (CAS 27344-41-8) date 2003 (Draft version): This Fluorescent Whitening Agent (FWA) is mainly used in household detergents in concentrations ranging from 0,02 to 0,1%, and to a far lesser extent in textiles and paper. It has been demonstrated that DSBP-type FWAs undergo a rapid isomerization, followed by a photodegradation of >70% within 28 days. Assessment that the use of FWA-5 has no adverse effect on the aquatic environment has been confirmed.

From the available data both brighteners should be considered safe for use in consumer products and they have no adverse effective to the environment.

Whatever, as wrote above, these products are mainly used in detergent product, they can't be representative for paper brighteners.

⁴⁰ Both test method are intended to be used for "Paper and board intended to come into contact with foodstuffs"

IPCS Documentation

A SIDS Initial Assessment Report on “Fluorescent Brightener 220 (CAS 16470-24-9) 2001” is also available to IPCS (International Programme on Chemical Safety):

The report states that:

*The world production of **C.I. Fluorescent Brightener 220** amounts to about 35,000 t/a a.i. by 12 producers. **The substance is used as a whitening agent in the paper and textile industry.** Recommended concentrations for whitening of paper and textiles are in the range of 0.05 to 0.5 % a.i. at maximum. Due to the high molecular weight of the substance and low releases from products human exposure is assumed to be very low.*

According to measured data on soil adsorption Fluorescent Brightener 220 can be regarded as a substance with high geo-accumulation properties.

The acute toxicity has been determined for fish, daphnia and algae.

However, **there are no information available on the release of fluorescent brightener from processing of paper** and textiles as well as from paper recycling and cleaning of treated textiles in households. A very rough estimation of possible environmental releases from textile and paper processing according to the EU Technical Guidance Document⁴¹ shows that from this life-cycle step high sediment concentrations are to be expected.

Recommendations

In the BAT Reference Document for pulp and paper Industry is explained that a tertiary effluent treatment, consisting of a combination of Ozone with fixed bed biofilm reactor, can drastically reduce or eliminate substances such as colour, AOX, heavily degradable optical brighteners.⁴²

Conclusions

From the consideration made above, it emerges that, there are three alternative solution to resolve the OBAs issue:

1. completely ban them,
(following other European Environmental labels on graphic paper and the Precautionary Principle adopted by the EU Commission⁴³ (this solution will result in a less bright product and/or in a higher use of bleaching agents);
2. put some limits to the use of this substances,

⁴¹ Available on <http://ecb.jrc.ec.europa.eu/documentation/>

⁴² IPCC reference document BAT Pulp and Paper industry, page 305

⁴³ Available on:

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/00/96&format=HTML&aged=1&language=EN&guiLanguage=en>

- e.g. limiting the brightness % in the final product;
3. allow their use,
 waiting that new information and data are available about this group of substances.

4.2 EDTA (ETHYLENE DIAMINE TETRAACETIC ACID)

Definition

EDTA is a widely used acronym for the chemical compound ethylenediaminetetraacetic acid and its salts: it is a powerful complexing agent of metals and a highly stable molecule, offering a considerable versatility in industrial and household uses. Since it is applied predominantly in aqueous medium, it is released into the environment through wastewaters.

Uses

EDTA compound are use in many field, such as detergent production, water treatment, Pulp and Paper industry, pharmaceutical, food additives, cosmetic and many others. The following table shows what are the industrial sectors that mainly uses EDTA in their production processes (percentage, breakdown for western Europe, CEFIC, 1998)⁴⁴.

Table 4.1 – EDTA use ratio among different industrial sectors

INDUSTRY	% of EDTA use on the Western EU total
Cleaning products for industry and skilled trades	28,7%
Photochemicals	14,3%
Agriculture	13,5%
Pulp and paper industry	12,9%
Household laundry and cleaning products	7,0%
Textile industry	1,2%
Electroplating industry	0,7%
Cosmetics	1,2%
Water treatment	0,5%
Other uses	7,6%
End uses unknown	12,2%

⁴⁴ EU RAR (Risk Assessment Report) CAS 64-02-8 NA4EDTA, 2004 p. 70

Highlights

Detergents: EDTA is used in small amounts in many detergents as a stabiliser for perborate. EDTA was phased out of most detergents for professional use several years ago due to its potential negative environmental effects⁴⁵.

The following products categories of the EU Ecolabel have interdict the use of EDTA and its salts: Laundry Detergent; Hand Dishwashing; Detergent for dishwashing machines; All purpose cleaners and cleaners for sanitary facilities. The group of Soap, shampoos and hair conditioner limits EDTA use.

Food & Drinks: in The USA the FDA (Food and Drug Administration) has approved EDTA as a food additive that is generally recognized as safe (See the US Code of Federal Regulations-21 CFR 172.135⁴⁶ and 21 CFR 173.315⁴⁷).

Medicals: EDTA molecule acts as an anticoagulant in medical and laboratory equipment. It is only used in tubes of blood and medical machinery since it “chelates” all the calcium contained in blood. This comes in the form of a powder or small amount of liquid in tubes. It is famous for being used as a medical treatment for acute hypercalcemia and lead poisoning.

Pulp and Paper Production: EDTA and DTPA (following: “Q”) are applied thanks to their good sequestering properties, i.e. they suppress the activity of the dissolved transition metal ions without precipitation. These metal ions are able to catalyse the decomposition of the bleaching agent hydrogen peroxide into radicals. Totally chlorine free (TCF) bleaching is currently possible only by treating the pulp with Q before the hydrogen peroxide stage. Increased concentrations of Q are therefore found in wastewaters generated from the production of TCF pulps. In wastewater analyses of a TCF mill producing market kraft pulp 25-40% of charged Q has been identified. This corresponds to Q contents of 10 and 15 mg Q/l in the effluent at a charge of 2 kg Q per tonne of pulp.⁴⁸

Blauer Angel criterion for paper product interdict the use of EDTAs and DTPAs in the waste paper treatment⁴⁹.

EU Legislation

The EDTA was included in the annex I of the Council Regulation (EEC) No 793/93 of 23 March 1993 *on the evaluation and control of the risks of existing substances, emended by the regulation 1906/2006 (Reach)*. The regulation set the risk assessment of EDTA and Na₄EDTA following the principles of the *Council Regulation (CE) 1488/94 (emended by Reach)*. Both EU RARs (Risk

⁴⁵ http://www.eco-forum.dk/detergents/index_files/Page693.htm (Environmental Assessment of laundry detergents, ETSAP Project)

⁴⁶ <http://www.fda.gov/Food/FoodIngredientsPackaging/FoodAdditives/ucm061705.htm>

⁴⁷ <http://www.fda.gov/Food/FoodIngredientsPackaging/FoodAdditives/FoodAdditiveListings/ucm091048.htm>

⁴⁸ Reference Document on Best Available Techniques in the Pulp and Paper Industry p.117

⁴⁹ Blauer Angel Criterion 3.6 “Waste paper treatment shall be done without the use of chlorine, halogenated bleaching agents and poorly biodegradable complexing agents, such as e.g. ethylenediaminetetraacetic acids (EDTAs) and diethylenetriaminepentaacetic acids (DTPAs)”

Assessment Reports) are available on the official web site of Ex-ECB (European Chemical Bureau)⁵⁰.

EDTA has been included in the Annex III of the *Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy*, and is subject to review for possible identification as **priority substance** or **priority hazardous substance** in the *Water Framework Directive*. The Commission will report the outcome of its review to the European Parliament and to the Council by **13 January 2011**.

Substances identified as priority hazardous substance in the Water Framework Directive means: *Member States should implement the necessary measures with the aim of progressively reducing pollution from these substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances. (in accordance with the directive 2000/60/EC)*

In the "Report from the commission to the European Parliament and the Council" pursuant to Article 16 of Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents, concerning the biodegradation of main non-surfactant organic detergent ingredients, the following sentence is reported (for the abbreviations meaning, please, see at the bottom of the section) :

" EDTA and tetrasodium EDTA: SCHER confirmed the earlier scientific opinion of SCTEE, that there is no risk from the use of EDTA in household detergents, whilst for some other applications (industrial detergents, paper mills, circuit board producers etc) a more precise exposure assessment is needed to exclude potential risks."

On the BAuA official web site (www.baua.de) of

The German "Federal Institute for Occupational Safety and Health" published two EU RARs of behalf of the European Union inherent EDTA and NA₄EDTA (available also on the BAuA official web site⁵¹) whose environmental final considerations are below reported:

Conclusion (iii) *There is a need for limiting the risks; risk reduction measures which are already being applied shall be taken into account. This conclusion is reached because of the high releases:*

- *due to the use of EDTA in industrial detergents,*
- ***due to the use by paper mills,***
- *due to the use by circuit board producers,*
- *during recovery of EDTA containing wastes.*

The risk characterisation for these scenarios led to a risk for aquatic organisms.

It is also available on BAuA the Commission Communication on the results of the risk evaluation and the risk reduction strategies for the substances: Dibutylphthalate; 3,4-Dichloroaniline; Di-'isodecyl' phthalate; 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich; Di-'isononyl' phthalate; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich; Ethylenediaminetetraacetate; Methyl acetate; Monochloroacetic acid; n-Pentane; Tetrasodium ethylenediaminetetraacetate.

⁵⁰ <http://ecb.jrc.ec.europa.eu/documentation/>

⁵¹ www.baua.de

A specific EU Commission Communication⁵² gives the strategy for limiting the risk of EDTA use for the environment:

[...] it is recommended:

[...] to facilitate permitting and monitoring under Council Directive 96/61/EC⁵³ (Integrated Pollution Prevention and Control), EDTA should be included in the ongoing work to develop guidance on 'Best Available Techniques' (BAT).

[...] to take persistent complexing agents into account in the European eco-labelling of paper products and to extend the existing European eco-labelling for cleaners to industrial cleaners under Regulation 1980/2000/EC."

Environmental Aspect

The main concerns on EDTA are its poor biodegradability, the contribution of heavy metals bioavailability and the mobilization of metals from sediments and soils leading to contamination of surface and ground waters. Regard these issues the EDTA Risk Characterization for different uses scenario, including also the pulp and paper production, is available in the specific RARs.

The EU Risk assessment Reports uses, as indicator to evaluate the environmental risk, the **PEC/PNEC ratio**, where as PEC is defined the Predicted Environmental Concentration "which is the concentration one expects to find in the environment", and as PNEC is meant the Predicted No Effect Concentration "that is, the concentration that causes no adverse effect to the Environment"⁵⁴. When the PEC/PNEC ratio is higher than "1" a potential risk for environment could be foreseen.

Pulp and paper

For the exposure estimation, two alternative scenarios were provided in the RER: for the first scenario wastewater purification in a long-term aerated biological treatment plant (LAS) reflecting the best available technique is assumed, while the second scenario is based on available monitoring data in plants effluents.

⁵² Commission Communication on the results of the risk evaluation and the risk reduction strategies for the substances: Dibutylphthalate; 3,4-Dichloroaniline; Di-'isodecyl' phthalate; 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich; Di-'isononyl' phthalate; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich; Ethylenediaminetetraacetate; Methyl acetate; Monochloroacetic acid; n-Pentane; Tetrasodium ethylenediaminetetraacetate.

⁵³ The IPPC directive has recently been codified 2008/1/EC

⁵⁴ EU RAR (Risk Assessment Report) CAS 64-02-8 NA4EDTA

Table 4.2 - Risk characterisation for the use of EDTA in the pulp and paper production

	Long-termed aerated biological treatment	No effective treatment
PEC _{local water}	0.5 mg/l	2.6 mg/l
PEC / PNEC _{aqua}	0.23	1.2
C _{effluent}	4 mg/l	40 mg/l
C _{efflu} /PNEC _{micro}	< 0.08	< 0.8

The result indicates that for pulp and paper mills without an effective industrial wastewater treatment, a risk to the aquatic environment is expected: Conclusion (iii) (see above).

For sites where the sewage is purified with long-term aerated biological treatment plants, a risk is not expected, as provided by the Conclusion (ii): “There is at present no need for further information and/or testing and for risk reduction measures beyond those which are being applied already”⁵⁵.

The risk assessment for aquatic organisms resulted in a PNEC_{aqua} of 2.2 mg/l. The PNEC_{microorganism} was determined to >50 mg/l.

Test Methods

Currently the international standard used to analyse the presence of the six water-soluble organic complexing agents listed below is the **ISO 16588:2002 Water quality -- Determination of six complexing agents -- Gas-chromatographic method Standard** (concentration range from 0,5 micrograms/litre to 200 micrograms/litre):

EDTA (ethylenedinitrilotetraacetic acid);

NTA (nitrilotriacetic acid);

DTPA (diethylenetrinitrilopentaacetic acid);

MGDA (methylglycinediacetic acid);

β-ADA (β-alaninediacetic acid);

1,3-PDTA (1,3-propylenedinitrilotetraacetic acid).

The method is applicable to drinking, ground, surface and waste water.

LIST OF ABBREVIATIONS

PEC: Predicted Environmental Concentration

PNEC: Predicted No-Effect Concentration

SCHER: Scientific Committee on Health And Environmental Risks

SCTEE: Scientific Committee on Toxicity, Ecotoxicity and the Environment

⁵⁵ EU RAR (Risk Assessment Report) CAS 64-02-8 NA4EDTA, 2004 p. 66

Conclusions

From the consideration made above, it emerges that, probably a proposal for the exclusion or limitation of EDTAs need to be based on more specific studies and more reliable data.

Following the SCTEE scientific opinion, a more precise exposure assessment of EDTA in paper mill application is needed to exclude potential risks.

SCTEE agree with the RARs exposure assessment as a preliminary approach. There are controversial result from the assessment due to the different behavior of various chemical forms and the influence of environmental parameters (pH, hardness). The result are probably overestimate⁵⁶.

Furthermore if EDTAs will be indentified as a priority substance or priority hazardous substance in the Water Framework Directive⁵⁷, every Member State should implement the necessary measures with the aim of progressively reducing pollution from these substances.

⁵⁶ Opinion on the results of the Risk Assessment of EDTA available on http://ec.europa.eu/health/ph_risk/committees/sct/sct_opinions_en.htm

⁵⁷ Outcomes foreseen by 13 January 2011

4.3 CONTACTS

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4.4 REFERENCES

1st AD HOC WORKING GROUP (AHWG) Meeting Minutes on the Revision of the EU Ecolabel criteria for Copying and Graphic paper -European Commission - DG Environment, Rome, 9 September 2008.

2nd AD HOC WORKING GROUP (AHWG) Meeting Minutes on the Revision of the EU Ecolabel criteria for Copying and Graphic paper -European Commission - DG Environment, Rome, 13 March 2009.

ALEY, THOMAS, 1991 - "The Water Tracer's Cookbook and Related Groundwater Tracing Information". Ozark Underground Laboratory, Protem, Missouri.

ASSOCARTA, 2007 - "Industria cartaria nel 2006".

BLUE ANGEL (2007), German labelling at <http://www.blauer-engel.de>.

BREF, 2001- Reference Document on Best Available Techniques in the Pulp and Paper Industry.

CEPI, 2006 - "Statistics 2006- European pulp and paper industry".

COMMENTS TO QUESTIONNAIRES (2008) – Answers to questionnaires on the modification of the existing criteria, LCE, February – March 2008.

COMMISSION DECISION 2002/741/EC of 4 September 2002 establishing revised ecological criteria for the award of the Community eco-label to copying and graphic paper and amending Decision 1999/554/EC.

Decree of Ministry of Environment (DM 8/05/2003 n°203) at www.giustizia.it

Directive 61/96/CE: Integrated Prevention Pollution Control- IPPC, 1996

D.Lgs 372/99 - Italian guidelines for the Best Available Techniques for paper industry, 2004.

DOGC 3651- DGQA Catalonia labelling, 06 June 2002, at <http://www.mediambient.gencat.cat/>

ECOLABEL CATALOGUE, 2008 at <http://www.eco-label.com>

Effluents from bleached kraft pulp manufacture-Review focused on literature on environmental impacts, published since 1995-Klaus Niemelä-28.2.2007 www.kcl.fi

EUROPEAN COMMISSION ENTERPRISE – Forest based Industries at <http://ec.europa.eu/enterprise.html>

EUROPEAN COMMISSION GREEN PUBLIC PROCUREMENT, 2008 – GPP Training Toolkit, Module 3- Purchasing Recommendations - Background Product Report. http://ec.europa.eu/environment/gpp/toolkit_en.htm

EUROPEAN COMMISSION GREEN PUBLIC PROCUREMENT, 2008 – GPP Training Toolkit, Module3 - Purchasing Recommendations – Product Sheet. http://ec.europa.eu/environment/gpp/toolkit_en.htm

EUROPEAN COMMISSION, 2007– Final draft for the development of Eco-label criteria for printed-paper products; October 2005

EUROPEAN COMMISSION, 2007– Final draft for the development of Eco-label criteria for tissue paper products; October 2006

FAY, STEFFAN R.; SPONG, RONALD C.; ALEXANDER, SCOTT C.; AND ALEXANDER, E. CALVIN, JR., 1995 “Optical Brighteners: Sorption Behavior, Detection, Septic System Tracer Applications” Published in Proceedings of the International Association of Hydrogeologists XXVI International Congress, Edmonton, Alberta, Canada.

GHG Protocol, 2009 – Calculation tool: “compilation of emission factors used in the cross-sector tools” (available to <http://www.ghgprotocol.org/calculation-tools/all-tools>).

GPEM/DDEN, “Guide de l’achat public éco-responsable- Achat de papier à copier et de papier graphique” - 2005 at <http://www.ecologie.gouv.fr/IMG/pdf/05-064.pdf>

IEA, 2008 - CO₂ Emissions from Fuel Combustion (2008 Edition)

IFEU 2006, “Ökologischer Vergleich von Büropapieren in Abhängigkeit vom Faserrohstoff”

INFOR-Projekt-Nr. 19 Comparison of Environmental Effects on Aquatic Life in the Manufacture of ECF and TCF Sulphate Pulps- Dr.-Ing. U. Hamm Prof. Dr.-Ing. Dr. h.c. L. Götttsching Institut für Papierfabrikation ;

NORDIC ECOLABELLING, 2006 - Swan labelling at <http://www.svanen.nu>

SEMC, “Environmental Management Council's procurement criteria for paper products”- 2007 at http://www.msr.se/en/green_procurement/criteria

UBA 2000, “Ökobilanzen für graphische Papiere”

UN/ECE, 2006 (a) -Timber Forest Product Statistics at <http://www.unece.org/trade/timber/mis/fp-stats.htm>

UN/ECE, 2006 (b) - FOREST PRODUCTS ANNUAL MARKET REVIEW 2005-2006; Geneva Timber and Forest Study Paper 21 - UNITED NATIONS New York and Geneva.

UN/ECE, 2008 - FOREST PRODUCTS ANNUAL MARKET REVIEW 2007-2008; Geneva Timber and Forest Study Paper 23 - UNITED NATIONS New York and Geneva.

UNEP PUBLICATION, 2001 - “ SIDS Initial Assessment Report” for SIAM 13, Bern, Switzerland, 6-9 November 2001