Annex 1

Of DT_ECO-03/2009

STUDY FOR THE COPYING AND GRAPHIC PAPER CRITERIA REVISION

2nd Background Report

VERSION 31st July 2009

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

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SUMMARY

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 contain the issues that were raised during the 2nd AHWG meeting together with the comments received after.

These documents, appropriately updated with comments received meanwhile, will be presented during the EUEB of September 2009 and will constitute the base of discussion for the 3rd AHWG (5th November 2009,Bruxelles).

Task 2

The Final Criteria Proposal with the relative 3rd background document will contain the decisions which will be taken during the 3rd AHWG meeting . The Final Report, containing the information 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. The Final Draft Criteria Proposal will be then presented to the EUEB of December 2009. After the approval of the criteria proposal by the EUEB 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	1st Background document delivery 1st Draft Criteria Proposal delivery	ISPRA/LCE	13 March 2009	1st Background document 1st Draft Criteria Proposal	**OK**
	2nd AHWG meeting	ISPRA/LCE	**27 March 2009**	1st Background document 1st Draft Criteria Proposal PPT presentation	**OK**
	Minutes of the 2nd AHWG	ISPRA/LCE	within 2 weeks	Minutes	**OK**
	Management of AHWG comments	ISPRA/LCE	April -June 2009		**OK**
	2nd Background document delivery 2nd Draft Criteria Proposal delivery	ISPRA/LCE	July 2009	2nd Background document 2nd 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**	2nd Background document 2nd Draft Criteria Proposal	NEXT
	Management of comments	ISPRA/LCE	September-October 2009		NEXT
	2nd Background document "EUEB revised" 2nd Draft Criteria Proposal "EUEB revised"	ISPRA/LCE	October 2009	2nd Background document 2nd Draft Criteria Proposal	NEXT
2	**3rd AHWG meeting**	ISPRA/LCE	**5 November 2009**	2nd Background document revised with comments 2nd Draft Criteria Proposal revised with comments	NEXT
	Minutes of the 3rd AHWG	ISPRA/LCE	within 2 weeks	Minutes	NEXT
	Management of AHWG comments	ISPRA/LCE	November 2009		NEXT
	3rd Background document delivery Final Draft Criteria delivery	ISPRA/LCE	25th November 2009	3rd Background document Final Draft Criteria	NEXT
	Presentation of the final draft Criteria at the **EUEB meeting**	ISPRA/LCE	**9 December 2009**	**3rd Background document Final Criteria Proposal**	NEXT
	User Manual for applicants and CBs	ISPRA/LCE	January 2009	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).

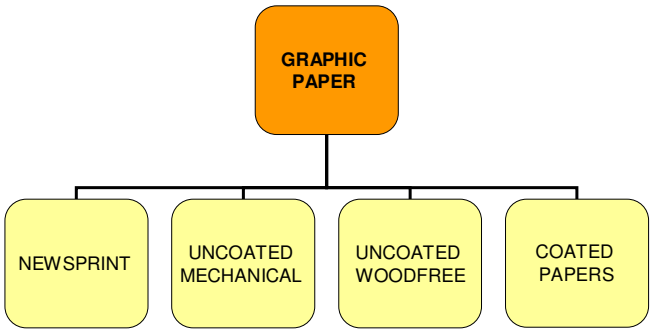

Table 1.2– "Graphic Paper "classes definitions by CEPI (Source: CEPI)

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/m² but can be as high as 65g/m². 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 2009[1].

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 CEPI[1] and ASSOCARTA[2] consulted documentation has demonstrated.

2.2 CURRENT ECOLABEL 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

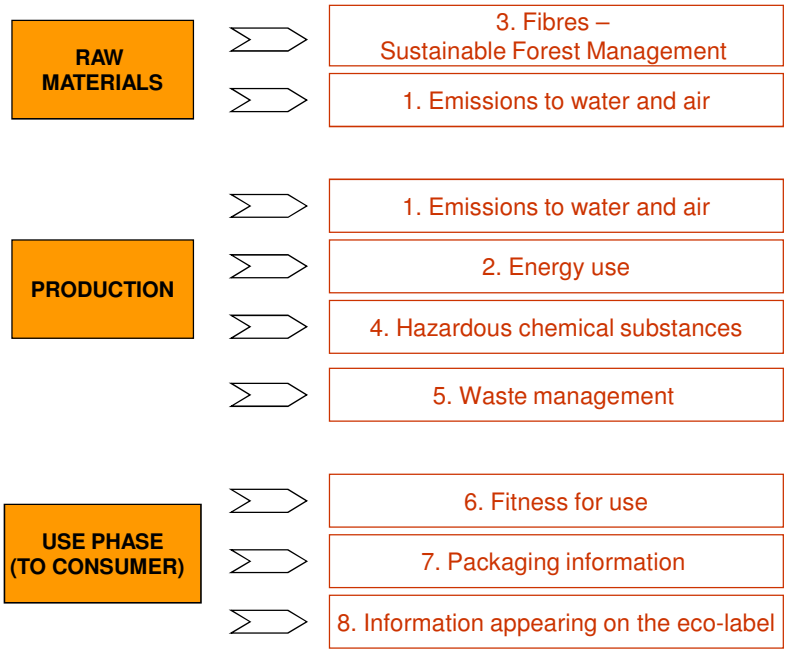

Figure 2.1 – Structure of the current Ecolabel criteria.

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 group[3].
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 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.

[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.

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 2.3 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	-
PAPER	INTEGRATED PAPER MILLS	from mechanical pulp	< 0,01	-
PAPER	INTEGRATED PAPER MILLS	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
PULP	CHEMICAL	sulphite	4.432	4.986	4.000	600	800	800
PULP	MECHANICAL	n.a.	277	1.662	900	1.900	2.600	2.500
PULP	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	-
		MECHANICAL pulp	coated	831	3.324	-	1.700	2.600	-
			printing	277	1.662	-	1.700	2.600	-
		RECYCLED FIBRES	-	n.d.		1.800	n.d.		800
	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.

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.

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 emission parameters 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 2006[7], 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 CO_2 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 4.1[8] 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.

Marked in blue you will find the most important topics that were discussed during the 2nd AHWG held in Rome (27th March 2009) and the different positions that emerged during the meeting and in written comments received by ISPRA after the AHWG.

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 **monoglazed** paper grade had also been requested by some producers.

[8] Analysis of emission and energetic consumption data of 38 paper mills and 158 pulp 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 Angel). 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 definition[9] 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 HIGLIGHTS

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 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 will be instead included in the Printed Paper Products Draft on which the Commission is currently actively working.

[9] EC green public procurement, 2008: page 26.

[10] EU GPP, 2008

Criterion 1. – Emission to air and water

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

	EUROPEAN NATIONAL LABELS			
	Eco-label	**Nordic Swan**	**Blauer Engel**	**DGQA**
EMISSION TO WATER AND AIR	a) COD : Pcod < 1.5 S : Ps < 1.5 NOx: Pnox <1.5 Ptot< 3 b) AOX< 0.25 kg/t c) CO_2 < 1100-1000 kg/t(CO_2 from fuel and electricity)	a) COD: Pcod < 1.5 S : Ps < 1.5 NOx: Pnox < 1.5 P : Pp < 1.5 Ptot< 4 b) AOX< 0.4 kg/t c) CO_2 < 300-1000 kg/t (CO_2 just from fuel)	n.a.	a) COD: No more than 95% of legislation limits for water residuals. b) AOX: bleaching with chlorant compounds are banned.

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_{NOx}) 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 PO_4.
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_{COD} = PCOD, pulp × CODweighted reference, pulp/(CODweighted reference, pulp + CODreference, paper) +PCOD, paper × CODreference, paper/(CODweighted reference, pulp + CODreference, paper)

b) User manual's formula:

P_{COD} = [CODweighted ref pulp/ (CODweighted ref pulp+CODrefpaper)]× CODpulps/CODweighted ref pulp + [CODrefpaper/ (CODweighted ref pulp+CODrefpaper)]×CODpaper/CODrefpaper
= (CODpulps +CODpaper)/ (CODweighted ref pulp+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:

$P_{COD,\ pulp}$= Σ (pi× CODpulp, i/CODreference, pulp)

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

$P_{COD,\ pulp}$ = Σ (pi× CODpulp, i) / CODweighted reference pulp

where **CODweighted reference, pulp = Σ (pi× CODreference, pulp)**
as confirmed also by the Printed Paper and new Tissue Paper criteria and by the Nordic Swan

Criteria[11]

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 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 is now proposed.

EXAMPLE

In order to better understand the problem, let's consider the following theoretical example:

An uncoated paper is produced at a non integrated paper mill and the pulp and paper emissions and input data used are the following ones:

	PULPS			PAPER MILL
	Kraft	CTMP	DIP (recycled)	
%	40	30	30	-
COD [kg/t ADT]	23	20	2	2
CODref value [kg/t ADT]	18	15	2	1

[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.

For simplicity sake let's not consider at the moment the moisture content of the pulps, and let's pretend that it is possible to have separate emission values of COD for CTMP and DIP pulps (while generally the production of these pulps is integrated).

Then the weighted reference values are the following ones:

COD weigh ref pulp [kg/t ADT]= (18*0.4+15*0.3+2*0.3)= **12,30**

COD weigh ref paper [kg/t ADT]= **1**

If we now apply the "Criteria Formula" then we have:

PCOD criteria= [(0.4*23/18+0.3*20/15+0.3*2/2)*12.3 +(2/1*1)] /(12.30+1)=(**14.883**+2)/13.30=**1.27**

By using the "User Manual Formula" instead we get:

PCOD user _manual= [(0.4*23+0.3*20+0.3*2) +(2)] /(12.30+1)=(**15.8**+2)/13.30=**1.34**

So with the User Manual Formula we get an higher value due to a calculated higher emission of COD by the pulps (as you can see by comparing the numerators of the two results).

This discrepancy becomes higher if we consider that the pulp mix is not generally =100% because it also includes fillers and coatings.

So if we consider that the 3 above mentioned pulps have a different share (%), for instance:

Kraft	CTMP	DIP (recycled)
45	20	20

So that the total is 85% (and the remaining 15% is fillers and coatings) then the differences are higher since we get:

PCOD criteria= (11.96+2)/12.50 =**1.12**

PCOD user _manual= (14.75 +2)/12.50= **1.34**

Therefore the 2 formulas can give the same result only in the simplest case where just one pulp type is used and only if the % of this pulp is 100%.

In our example, in fact, if we consider using only 100% of the Kraft pulp then we have:

PCOD criteria= PCOD user _manual= 1.34

But if the % of the single Kraft pulp used is lowered at 85% then we have:

PCOD criteria= 1.09

PCOD user _manual= 1.27

If we now apply these two calculations to a real example that we evaluated:

"Uncoated paper produced using "chemical pulp (Kraft), mechanical pulp and recycled fibre (deinked pulp) in an integrated paper mill"

Then we have:

Calculation made using the "criteria formula"

COD pulps= 0.49 kg/ADT

COD weigh ref pulp =3,91 kg/ADT

COD paper= 3,56 kg/ADT

COD ref paper=1 kg/ADT

PCOD = (0,49+3.56)/ (3.91+1) = 0.82

Calculation made using the "User manual formula"

COD pulps=2,4 kg/ADT

COD weighted ref pulp= 4,142 kg/ADT (including humidity, multiplying by 95/90)

COD paper= 3,56 kg/ADT

COD ref paper= 1 kg/ADT

PCOD = (2,4+3,56) / (4,142+1)=1,16

It can be noticed that the final results are quite different, and considering that the denominators of the formulas are almost the same, the main difference is in the COD emission of the Pulps at numerator:

COD pulps (criteria formula) = 0,49

COD pulps (user manual formula) = 2,4

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 HIGLIGHTS

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 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. Being the sulphite pulp replaceable by other pulp grades, this exception could be seen as an unjustified permission to pollute and is, therefore, unacceptable.

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.".

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, SOx and NOx) 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**
Unbleached chemical pulp[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 marketpulps)	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.

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.

[12] Only in the Tissue paper criteria

[13] Value obtained from calculation on the basis of the total

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.

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_{NOx} 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 allocation of the emissions of NO_x and S the electricity (the net electricity) and the heat generation (the net heat) according to following equation:

The share of the emissions from the electricity generation:

2 x (MWh(electricity)) / [2 x MWh(electricity) + MWh(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."

Furthermore, only in case of integrated mills, pulp mills or paper mills using only natural gas for the production of paper the P_S value can be set to 0.

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.

They 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.

TCF bleaching causes very low AOX emissions, but uses more energy, chemicals and wood for tonne of pulp than ECF.

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 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 Back 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 HIGLIGHTS

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.

At the end of the discussion it seems that the best solution is to leave the criterion as it is, but lowering the current limit to 0,2 Kg/ADt pulp.

As shown in Appendix 4.1/1st Background document, such a modification 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).

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

Section (c): CO_2

The current values for CO_2 emissions are:

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

Some stakeholders suggested to lower the current CO_2 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 (CO_2

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)[14].

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: CO_2 emissions", showed that the current limits are already stringent for the most environmental-friendly European paper industries.

[14] 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.

2nd AHWG HIGLIGHTS

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 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 CO_2 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 CO_2 emissions, in agreement with the different single national fuel mixes.

GHG protocol makes reference to the "CO2 Emissions from Fuel Combustion (2008 Edition)"[15] published by IEA[16]: below a table summarising the Emission Factors for the Electricity production based on the different European national mixes[17] is proposed.

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

[16] International Energy Agency

[17] EU 27 plus Norway considered

Table 3.1 – EU Countries Fuel-based Electricity Emission Factors for CO_2 (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 JRC[18] 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 site[19]: *"... All process data sets [...] are not to be considered as*

[18] Further info on http://lca.jrc.ec.europa.eu/lcainfohub/index.vm

[19] 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 CO_2 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 CO_2 emission rate: maybe the amount of green energy purchased and used for the production processes should not be considered.

Table 3.2 - Review table 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	More general test methods; 0,20 kg/ADT?	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 CO2 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.

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

Table 3.3 - 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

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 Pe and Pf 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.

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

should probably have been:

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

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

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 Pf 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 HIGLIGHTS

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.

Criterion 3. – Fibres - Certified Forest Management

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

	EUROPEAN NATIONAL LABELS			
	Eco-label	**Nordic Swan**	**Blauer Engel**	**DGQA**
FIBRES	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 3.4 - 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

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 day[20]). 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 ;

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

- 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.

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 Tissue[21] paper.

Tissue paper (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...

[21] Revision process concluded: 2009/568/EC.

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 FLEGT[22] (EU Action Plan for Forest Law Enforcement Governance and Trade) –Regulation 2173/2005.

According to the previous considerations[23] 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.

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 HIGLIGHTS

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 Meeting[24]), 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.

[22] http://ec.europa.eu/development/policies/9interventionareas/environment/forest/flegt_briefing_notes_en.cfm

[23] See also chapter 2.5 "Sustainable forest management"

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

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 and the Environmental and Consumer associations support a high percentage of recycled content in the product: they recall the Czech Presidency paper "The fall in demand for recycled materials - Information from the Presidency[25], 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.

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".

The requirements on the Sustainable Forestry Management Certification and the CoC certification will be directly applied to the Ecolabelled product and not "at mill", to ensure that the materials which the certificates are referred to, are correctly used "in the product" and not for other productions.

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.

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

Criterion 4. – Hazardous chemical substances

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

	EUROPEAN NATIONAL LABELS			
	Eco-label	**Nordic Swan**	**Blauer Engel**	**DGQA**
HAZARDOUS CHEMICAL SUBSTANCES	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/dm2 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 MSDS[26]). 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

[26] 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) Surfactans 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"[27]):

> ***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)[28]."*

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.

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.

[27] 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))

[28] The article 57 of REACh includes substances classified as PBT and vPvB

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.

Criterion 5. – Waste management

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

	EUROPEAN NATIONAL LABELS			
WASTE MANAGEMENT	**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 3.5 - 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.

	EUROPEAN NATIONAL LABELS			
FITNESS FOR USE	**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 HIGLIGHTS

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.*

Criterion 7. – Information on the packaging

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

	EUROPEAN NATIONAL LABELS			
USER INFORMATION	**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 3[29] 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.

(*) the old web site must be replaced by the new www.ecolabel.eu

[29] Annex II in the new Ecolabel Regulation, in force after Autumn 2009.

Table 3.6 - 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 HIGLIGHTS

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;
- 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.

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 HIGLIGHTS

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.

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 light[30]. 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) [31].

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, and some studies (Aley, 1991; Fay, Spong, and Alexander, 1995) underline how Optical brighteners are less than benign from an environmental perspective. Many of the chemicals in this category are toxic to fish and other aquatic life. Some are also capable of causing mutations in bacteria. Compounding these problems is the fact that optical brighteners are also very slow to biodegrade into their less harmful component parts[32].

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

30 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).

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

32 http://www.usawaterquality.org/newengland/Topics/hot/brighteners.html

lignin, that absorbs ultraviolet light will lower the efficiency of brighteners. 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 food[33], 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-free[34].
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:

EUROPEAN LABELS	Ecolabel			Nordic Swan	Blauer Engel	DGQA
	C&G	Tissue[35]	Printed			
OBA prohibition	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)

[33] For further information see http://www.epa.gov/EPA-IMPACT/1998/January/Day-23/i1539.htm

[34] Available to http://www.loc.gov/preserv/supply/specific.html

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

- 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.

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 Document[36] 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.[37]

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 Commission38 (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,
   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

[36] Available on http://ecb.jrc.ec.europa.eu/documentation/

[37] IPCC reference document BAT Pulp and Paper industry, page 305

[38] Available on: http://europa.eu/rapid/pressReleasesAction.do?reference=IP/00/96&format=HTML&aged=1&language=EN&guiLanguage=en

shows what are the industrial sectors that mainly uses EDTA in their production processes (percentage, breakdown for western Europe, CEFIC,1998)[39].

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%

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 effects[40].

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 172.135[41] and 21 CFR 173.315[42]).

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

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

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

[41] http://www.fda.gov/Food/FoodIngredientsPackaging/FoodAdditives/ucm061705.htm

[42] http://www.fda.gov/Food/FoodIngredientsPackaging/FoodAdditives/FoodAdditiveListings/ucm091048.htm

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.[43]

Blauer Angel criterion for paper product interdict the use of EDTAs and DTPAs in the waste paper treatment[44].

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 Assessment Reports) are available on the official web site of Ex-ECB (European Chemical Bureau)[45].

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

[43] Reference Document on Best Available Techniques in the Pulp and Paper Industry p.117

[44] 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)"

[45] http://ecb.jrc.ec.europa.eu/documentation/

The German "Federal Institute for Occupational Safety and Health" published two EU RARs of behalf of the European Union inherent EDTA and NA_4EDTA (available also on the BAuA official web site[46]) 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.

A specific EU Commission Communication[47] 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/EC[48] (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

[46] www.baua.de

[47] 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.

[48] The IPPC directive has recently been codified 2008/1/EC

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"[49]. 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.

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

	Long-termed aerated biological treatment	No effective treatment
$PEClocal_{water}$	0.5 mg/l	2.6 mg/l
$PEC / PNEC_{aqua}$	0.23	1.2
$C_{effluent}$	4 mg/l	40 mg/l
$C_{effl}/PNEC_{micro}$	< 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"[50].
The risk assessment for aquatic organisms resulted in a PNECaqua of 2.2 mg/l. The PNECmicroorganism 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);
ß-ADA (ß-alaninediacetic acid);
1,3-PDTA (1,3-propylenedinitrilotetraacetic acid).

[49] EU RAR (Risk Assessment Report) CAS 64-02-8 NA4EDTA
[50] EU RAR (Risk Assessment Report) CAS 64-02-8 NA4EDTA, 2004 p. 66

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

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 overestimate[51].

Furthermore if EDTAs will be indentified as a priority substance or priority hazardous substance in the Water Framework Directive[52], every Member State should implement the necessary measures with the aim of progressively reducing pollution from these substances.

[51] 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

[52] Outcomes foreseen by 13 January 2011

4.3 CONTACTS

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