Joint Research Centre

Institute for Prospective Technological Studies

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EU Ecolabel criteria revision for Paper products: copying and graphic paper, tissue paper, and newsprint paper

7-9 June 2016, Seville

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•IE – Petten, The Netherlands
• *Institute for Energy*

•IRMM – Geel, Belgium
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•ITU – Karlsruhe, Germany
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IES/ IHCP/ IPSC – Ispra, Italy
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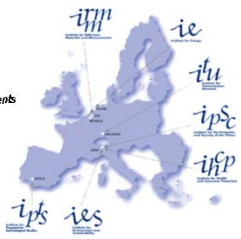

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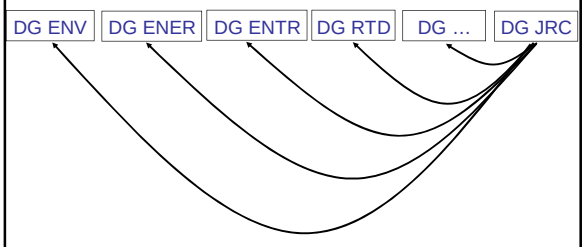
Joint Research Centre in the context of the European Commission:



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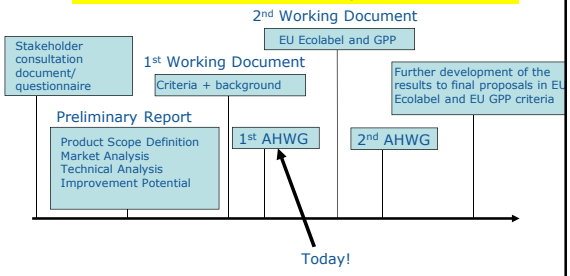
Activities in support of Product Policy

IPTS supports the development and implementation of Sustainable Product Policies, amongst them the EU Ecolabel Regulation, the Green Public Procurement Communication, the Ecodesign for Energy Related Products Directive and the Energy Labelling Directive.

The Product Bureau carries out the analysis of a broad range of product groups and development of environmental criteria with focus on techno-economic as well as environmental aspects.

Criteria revision process



Criteria Development for "Paper products group"

1. Stakeholders can provide comments on working document up to 1st of July, 2016;

2. Comments need to be submitted in BATIS

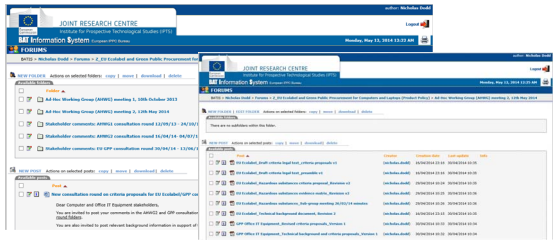
2. A draft criteria proposal for EU Ecolabel criteria will be prepared and published ahead of next AHWG

3. Second AHWG to take place in Brussels;

4. 3 weeks deadline for comments after 2nd AHWG

5. 2017 final draft criteria available

Using the BATIS system



1st AHWG (7-8th of June)

AGENDA Day 1: Tuesday, 7th June 2016

		SCHEDULE
1.	*Welcome and introduction* *Work programme and timeline, summary of scope and preliminary evidence base.* *Summary of the main findings from Preliminary report*	09:30 – 11:00
	Coffee break	11:00 – 11:15
2.	*Paper product groups scope and definitions*	11:15 – 12:15
3.	*General hazardous substance/mixture criteria: Draft criterion 4*	12:15 – 13:30
	Lunch break	13:30 – 14:30
4.	*General hazardous substance/mixture criteria: Draft criterion 4 (continued)*	14:30 – 15:15
5.	*Energy use: Draft criterion 2*	15:15 -16:00
	Coffee break	16:00 – 16:15
6.	*Energy use: Draft criterion 2 (continued)*	16:15 – 17:00
7.	*Waste Management: Draft criterion 5*	17:00 – 17:30

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1st AHWG (7-8th of June)

AGENDA Day 2: Wednesday, 8th June 2016

		SCHEDULE
1.	*Emissions to water and air – draft criterion 1*	09:30 – 11:30
	Coffee break	11:30 – 11:45
2.	*Emissions to water and air - draft criterion 1 (continued)*	11:45 – 13:00
	Lunch break	13:00 – 14:00
3.	*Fibre sourcing – draft criterion 3*	14:00 -15:15
	Fitness for use criteria, consumer information – draft criteria 6, 7 and 8	15:15 – 15:45
	Coffee break	15:45 – 16:00
4.	*New proposed criteria areas (water consumption control, EDTA and DTPA, Optical Brighteners)*	16:00 – 17:15
5.	**Summary and closure of the meeting**	17:15 – 17:30

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GPP stakeholder meeting (9th of June)

AGENDA Day 3: Thursday, 9th June 2016 – Focus on GPP criteria

		SCHEDULE
1.	*Introduction to GPP*	09:30 – 10:00
2.	*Scope and definition*	10:00 – 10:30
3.	*Criteria on energy consumption and water consumption*	10:30 – 11:15
	Coffee break	11:15 - 11:30
4.	*Bleaching and hazardous substances*	11:30 – 12:00
5.	*Criteria on fibre sourcing*	12:00 – 13:00
6.	*The environmental benefits of lower grammage paper?*	13:00 – 13:30
7.	**Summary and closure of the meeting**	13:30 - 14:00

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Summary of the main findings from Preliminary report

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Framework

1. Commission Statements
2. Update of best available techniques (BAT) levels;
3. Addressing the main environmental 'Hot spots"
4. Analysis of the product best practices present on the market
5. Harmonization with so called "horizontal approach" in line with EU Ecolabel Regulation (EC) 66/2010
6. Analysis of other existing ecolabels and initiatives, industry associations, as NGO and private label scheme criteria;
7. Synergies within the revised product groups;
8. Relation to the revision of EU Ecolabel criteria for converted paper, and printed paper

EU Ecolabel **statistics**

C&G, NS, and TS represent 9,5% (licenses), and 21% (products) of the total EU Ecolabel uptake

Product Group	Number of Licences	Number of Products	Awarding Competent Bodies
Tissue Paper	135	5 959	Austria (1), Belgium (1), Bulgaria (2), Czech Republic (2), Denmark (1), Finland (1), France (13), Germany(40), Italy (36), Lithuania (1), the Netherlands (3), Poland (2), Portugal (2), Slovakia (2), Slovenia (1), Spain (14), Sweden (6) and United Kingdom (7)
Copying and Graphic Paper	60	3 921	Austria (6), Finland (5), France (8), Germany(20), Italy (1), the Netherlands (2), Norway (2), Poland (2), Portugal (1), Slovenia (1), Spain (4), Sweden (7) and United Kingdom (1)
Newsprint Paper	5	32	Austria (1), Finland (2), France (1) and Spain (1)
TOTAL	**192**	**9 546**	**20 Countries**

Commission statements (1)

Copying and graphic paper criteria:

- ✓ Strengthen **the energy use and CO2 requirements** (refer to the most up to date BREF documents);
- ✓ **Include newsprint** paper in the **scope** of the criteria with a mandatory criterion on **minimum amount of recycled fibres**;
- ✓ Evaluate the **requirement on emissions** (refer to the most up to date BREF documents);
- ✓ Evaluate the criterion on **certified fibres;**
- ✓ Strengthen the criterion on **AOX emissions** according to the most up to date BREF document;
- ✓ Evaluate whether the criterion **on surfactants used in de-inking** could apply to all surfactants.

Commission statement (2)

Newsprint paper:

- ✓Investigate the suitability of establishing a compulsory **share of recycle fibres**;
- ✓Find a more principle approach in defining ¨**sustainable forestry**¨ **;**
- ✓Evaluate **the quality of the certification schemes** FSC and PEFC referred in the A&V of the current criteria;
- ✓Define **minimum requirements to which equivalency can be measured**, when referring to FSC and PEFC or equivalent.

Comission statements (3)

Tissue paper:

- ✓ **Compactness** of the product;
- ✓ Investigate **higher content of recycled paper**;
- ✓ Focus on **energy use and CO2 emission**;
- ✓ Focus on the **best emission values on BREF** document.

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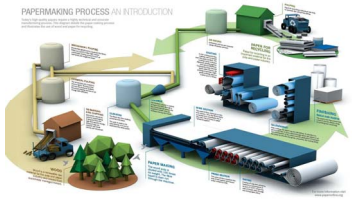
Operation	Processes
Raw material preparation	Debarking
	Chipping and conveying
Pulping	Mechanical
	Semi-chemical
	Chemical
Chemicals recovery	Evaporation
	Recovery Boiler
	Recausticizing
	Calcining
Bleaching	With or without removal of lignin
Stock preparation and papermaking	Preparation of stock
	Dewatering
	Pressing and drying
	Finishing

Steps involved in the manufacturing of pulp and paper



Source:paperonline.org

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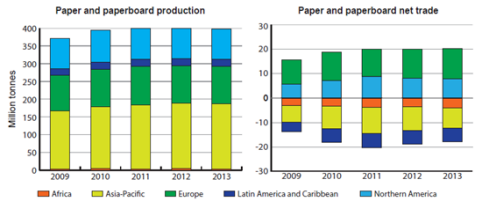
Pulping processes

Pulping process	Fibre separation mechanism	Yield	Pulp properties	Typical products
Mechanical	Mechanical energy	High (85-95%) lignin preserved	Short, weak, unstable, high opacity fibres, good print quality	Newsprint, writing paper, magazines, books, container board
Chemical	Chemicals and heat	Lower (45-50% for bleachable/bleached pulp. 70% for brown paper)	Long, strong, stable fibres	Kraft: bags, wrapping, linerboard, newsprint, graphic, writing paper, Sulfite: fine paper, tissue, glassing, newsprint
Semi chemical	Combination of chemical and mechanical treatments	Intermediate (55-85%)	"Intermediate" pulp properties	Corrugated board, food packaging, newsprints, magazines
Recycled	Mechanical energy with some heat and chemicals	Depends on waste paper source. Up to 95% for waste packaging, and 60% for waste hygienic products	Mixture of fibre grades, properties depend on waste paper source	Newsprint, writing paper, tissue, packaging

Market data



Regional paper and paper board production and net trade

The world paper and paperboard production increased from 371 in 2009 to almost 397.6 million tons of paper in 2013.

On average about 57 kilos of paper is consumed per capita in the world

Source: FAO

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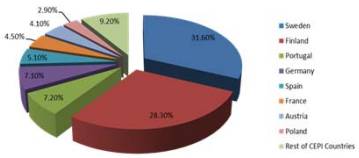
Types of pulp	Total production ('000 Tonnes)	Share	Total consumption ('000 Tonnes)	Share (%)
Mechanical & semi-chemical pulp	10 360	28,4%	10 186	24,8%
Sulphite	1 683	4,6%	1 428	3,5%
Sulphate	24 568	66,4%	29 076	70,8%
Total chemical pulp	26 264	71,9%	30 504	74,3%
Total wood pulp for papermaking	36 373	99,5%	40 690	99,1%
Other pulp	172	0.5%	361	0,9%
Total pulp	36 545	100%	41 051	199%

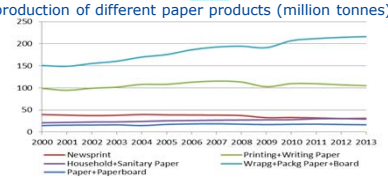


Total pulp production in CEPI countries in 2014

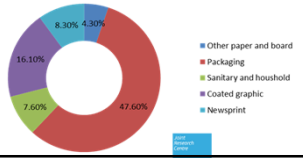
Source: CEPI

Market data

World production of different paper products (million tonnes)



Production of paper and board by grade in CEPI countries in 2014



LCA screening (1)

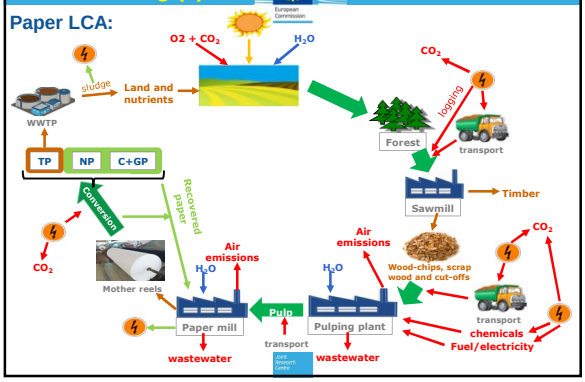
LCA screening study

- EU Ecolabel criteria should target the hot-spots in the life cycle of the PG.
- Necessary to:
  - Understand the life-cycle of the product group
  - Review the relevant LCA literature
  - Identify any relevant Product Category Rules (PCRs)
  - Identify any relevant Environmental Product Declarations (EPDs).

- Decide upon scope and boundaries.
- Where PCRs exist, pay attention to LCAs that respect them
- Where EPDs exist, pay attention to claims → verifiable

LCA screening (2)

Paper LCA:



LCA screening (3)

Preliminary LCA screening study

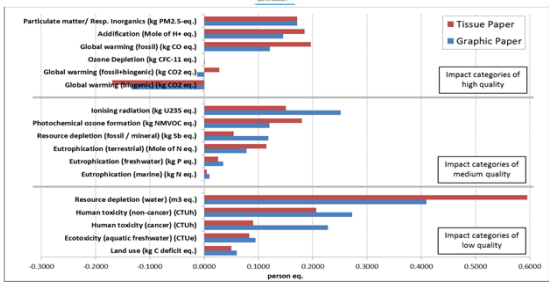
- **62 LCA** studies identified
- **3 sets of PCRs** identified
  - PEF study for intermediate paper products
  - International EPD system (Environdec)
  - Paper Profile (these may only be rules for EPD, not LCA)
- Around **100 relevant EPDs** identified:
  - 90 for paper products under "*Paper Profile*"
  - 4 for pulps under "*Paper Profile*"
  - 12 for processed paper and paperboard (UN CPC 3214) under "*Environdec*"

- Need to create a screening test and scoring system for LCAs
- Will be based on quality factors and compliance with both ISO 14040 framework and relevant PCRs.

Hot spots identified (1)

- Forest destruction and potential loss of biodiversity from sourcing of raw materials;
- Emissions to air during pulp and paper production (especially CO2, SO2 and NOx);
- Emissions to water during pulp and paper production (especially COD, AOX and P);
- Energy consumption during production (mainly fuel for pulp mills and electricity for paper mills);
- Water consumption during pulp and paper production;
- Energy and ecotoxicity due to the production and uses of chemicals during pulp and paper production;

Hot spots identified (2)



Identification of most relevant impact categories for a representative graphic paper intermediate product (*Source: PEFCR screening study*)

Best practices

1. **Fibre sourcing: virgin, recycled and non-wood:**
   - Use of wood from sustainably managed sources; and optimize the use of fibre from recycling;
2. **Fuel and electricity consumption, CO_2 emissions and climate change:**
   - Substitute coal or fuel oil for natural gas, substitute natural gas for biomass
   - Replace traditional boilers with Combine Heat and Power (CHP) units; Upgrade recovery boiler units to gasification combined cycle technology
3. **Water consumption:**
   - Optimize the closure of water circuits; and minimise water consumption, use of water savings techniques;
5. **Emission to water:**
   - Use environmentally benign bleaching sequences;
   - Minimize the use of poorly biodegradable organic substances; Optimise the dosing of N and P to wastewater treatment processes;
5. **Emission to air:**
   - Reduce sources that contribute to acidification (sulphur); and Modernise recovery boilers, replace with gasification combined cycle units;
6. **Solid waste:**
   - Implement integrated waste management plan, minimise waste generation and maximise recycling and waste recovery;

Current criteria

Structure of the current criteria

Raw materials
- Fibres sourcing
- Emission to water and air

Production phase
- Emission to water and air
- Energy used
- Restricted substances
- Waste management

Use phase
- Fitness for use
- Information for end-consumer

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Key changes proposed

- To merge the scope for copying and graphic paper with newsprint paper;
- To expand the scope for Tissue Paper;
- To update current emission limits in line with the new BREF ranges and to discuss what specific benchmark to use;
- To reduce current CO2 emission limits;
- To consider a more restrictive approach to the use of EDTA in ECF pulp mills;
- To introduce a common ambition level for fibre sourcing;
- To discuss a possible new water minimisation criterion based on process and pulp type;
- To address waste management.

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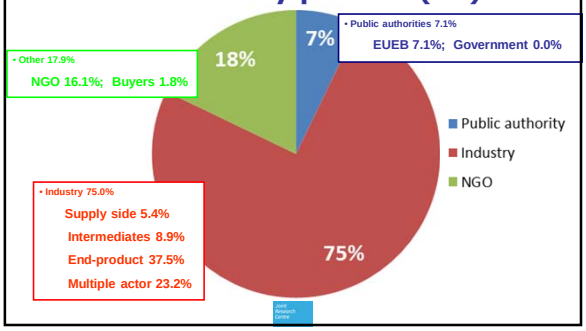
Questionnaire

Stakeholder survey profiles (56):



EU Ecolabel criteria revision for Paper products: copying and graphic paper, tissue paper, and newsprint paper

Product groups scope and definition

Current Scope

Product Group	Scope	
Tissue Paper **(2009/568/EC)**	Comprise sheets or rolls of *tissue paper* fit for use for personal hygiene, absorption of liquids and/or cleaning of soiled surfaces. The *tissue product* consists of creped or embossed paper in one or several plies. The *fibre content* of the product shall be at least 90 %.	The product group does not comprise any of the following: (a) wet wipes and sanitary products; (b) tissue products laminated with other materials than tissue paper; (c) products as referred to in Directive 76/768/EEC.
Copying and Graphic Paper **(2011/333/EU)**	Comprise sheets or reels of not converted, unprinted blank paper and not converted boards up to basis weight of 400 g/m^2.	It shall not include newsprint paper, thermally sensitive paper, photographic and carbonless paper, packaging and wrapping paper as well as fragranced paper.
Newsprint Paper **(2012/448/EU)**	Comprise paper made from pulp and used for printing newspapers and other printed products.	It shall not include copying and graphic paper, thermally sensitive paper, photographic and carbonless paper, packaging and wrapping paper as well as fragranced paper.

Methodology: Cross-analysis

1. European Standards and references: (CEN/TC, ISO,CEPI)
2. Paper industry terminology and classifications (intended use)
3. Product categorization: Other environmental schemes of relevance: (Blue Angel, Nordic Swan, Eco Mark,…)
4. Preliminary market analysis: (segmentation, trades)
5. Technical aspects and process differences (pulping, paper making)
6. Preliminary Life Cycle Assessment consideration (functional unit)
7. Stakeholders interaction
8. Questionnaire

SCOPE- Key aspects

Copying and graphic paper
Newsprints paper

-Possible merging to one product group: definition, pros & cons analysis;
-To extend the scope (e.g. investigate inclusion of paper board).

Tissue Paper

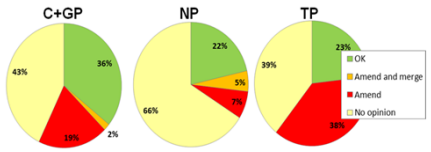
-Product group definition: ISO 12525:
-Inclusion of tablecloths, mats etc.;
-Relevance of keeping in the scope printed, colour and fragranced tissue paper.

Intermediate product certification :

-B2B approach

Questionnaire - Feedback

- 75% of participants – industry stakeholders (54% license holders)



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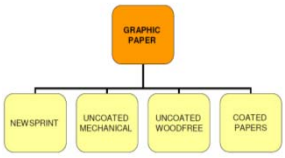
Definition by CEPI

Paper is a generic term for a range of materials in the form of a coherent sheet or web (…) Whereas board / paperboard is a generic term applied to certain types of paper frequently characterized by their relative high rigidity".

Graphic paper classes

-CEPI, ISO 4046: Paper, board, pulps and related terms.



Source: CEPI

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Market features

	Production				Apparent consumption			
	2010	2013	2014	Change (2013/2014)	2010	2013	2014	Change (2013/2014)
Graphic papers	44,490	39,783	38,953	-2.1	38,461	33,222	33,335	0.3
Newsprint	9,49	8,323	7,813	-6.1	9,49	8,022	7,721	-3.7
Uncoated mechanical	7,737	6,477	6,233	-3.8	6,261	5,068	4,934	-2.7
Uncoated woodfree	9,274	9,406	9,393	-0.1	9,623	8,665	8,623	-0.5
Coated papers	17,988	15,577	15,514	-0.4	13,088	11,467	12,057	5.2
Sanitary and household papers	7,098	7,411	7,59	2.4	7,46	7,232	7,447	3.0
Packaging materials	45,717	47,472	47,963	1.0	44,139	44,106	44,923	1.9
Case materials	26,718	27,864	28,058	0.7	26,923	28,081	28,163	0.3
Cartonboard	9,786	10,324	10,571	2.4	9,003	7,718	8,227	6.6
Wrapping papers	5,152	5,28	5,327	0.9	4,585	4,512	4,756	5.4
Other papers, mainly packaging	4,061	4,004	4,007	0.1	3,628	3,795	3,778	-0.5
Other paper and board	4,572	4,113	4,19	1.9	4,695	4,241	4,231	-0.2
Total paper and paperboard	101,875	98,779	98,695	-0.1	94,755	88,802	89,936	1.3

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Other schemes

- **Blue Angel;**
  - ✓ *RAL UZ 5: Sanitary Paper*
  - ✓ *RAL UZ 72: Printing and publication papers (NS included)*
- **Nordic Swan** - Basic Module, Chemical Module, Supplementary module (product specific):
  - ✓ *Nordic Tissue Paper*
  - ✓ *Nordic Graphic and Printing Paper (NS included);*
- **Umweltzeichen**
  - ✓ *UZ 02: Graphic Paper (NS included)*
- **Green Seal**
  - ✓ *(GS)-1 Sanitary Paper;*
  - ✓ *(GS)-15 Newsprint;*
  - ✓ *(GS)-7 Printing and writing paper;*

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Product intended use

1. Informative use:
   - Newspapers: used for printing newspapers, magazines, hand bills, etc. Paper is not sized, highly absorbent, it absorbs the relatively liquid inks used on printing process. It is supplied in sheets or reels either machine finished or glazed.
   - Printed graphic paper: paper must be receptive to ink and have reasonable strength, opacity and colour. A certain minimum strength is required for the actual printing operation and fitness for use for intended destination during the lifetime.
2. Packaging: corrugated medium (paper, paperboard, cardboard), kraft medium, testliner, liquid board, packaging, carton, etc.
3. Hygienic: tissue paper, toilet paper, kitchen paper, etc.
4. Specialty: Filter paper, thermal paper, fire or water resistant papers, official papers, stamps, and other specific applications

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CG and NS tech. features

Characteristic of newsprints and graphic papers

Grade	Fibre content	Format	Use	Weight (g/m2)	Brightness and colour
Newsprint	0. Not defined; 1. Mechanical; 2. Recovered paper; 3. Chemical Pulp	0. Not defined; 1. Reels; 2. Sheets	0. Not defined; 1. For newspapers; 2. Catalogue and magazine printing; 3. For other kinds of printing	0. Not defined; 1. <40; 2. 40-45; 3. >45 – 48.8; 4. >48.8	0. Not defined 1. White; 2. ISO Brightness < 59; 3. ISO Brightness: 60-68; 4. ISO Brightness: 69-71; 5. ISO Brightness 60-71; ISO Brightness: >72; 7. Coloured
Graphic papers	0. Not defined; 1. Mechanical; 2. Recovered paper; 3. Chemical Pulp; 4. Others	0. Not defined; 1. Reels; 2. Sheets; 3. Folio Sheets; 4. Cut Size Sheets	0. Not defined; 1. Rotogravue printing; 2. Offset Printing; 3. Digital Printing; 4. Office papers (incl. white envelopes); 5. Papers for converting; 6. Hand made papers; 7. Art Papers; 8. Thin Papers; 9. Book Printing Papers	0. Not defined; 1. 28; 2. 28-40; 3. 40-72 4. 73-150; 5. 151-180; 6. 181-225; 7. >225	0. Not defined 1. White; 2. ISO Brightness: 60-68; 3. ISO Brightness: 69-71; 4. ISO Brightness 60-71; 5. ISO Brightness: >72; 6. Coloured; 7. Opaque; 8. Transparent

Tissue paper – *Based on ISO 12625*

Tissue papers lightweight, dry or wet creped and some "non-creped" papers.

Tissue products can be made of one or several plies, each ply being of one or several layers, prepared as sheets or rolls (…) Products of such a kind derive from a single-ply, semi-finished, wet-laid tissue-base paper that is predominantly composed of natural fibres. The origin of fibres may be virgin or recycled, or a mixture of both. A typical grammage of single-ply tissue-base papers ranges from 10 g/m2 to 50 g/m2.

The properties of the tissue-base paper: a good textile-like flexibility, surface softness, low bulk density and high ability to absorb liquids. Commonly used for hygienic and industrial purposes.

Nonwovens are not classified as tissue, even if one subgroup of the nonwovens is manufactured in a wet-laid manner according to a process similar to the tissue making process.

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Proposed Scope

Product Group	Scope	
Tissue Paper	Comprise sheets or rolls of tissue paper fit for use for personal hygiene, absorption of liquids and/or cleaning of soiled surfaces. Tissue paper is base paper taken from the tissue machine before conversion (typically between 10 g/m² and 50 g/m²)" while "tissue product" is "tissue paper that has been converted into a finished product for end-user purposes It will include coloured, printed and/or fragranced tissue paper products. It will include tablecloths, mats and non-sanitary napkins, and other such products.	•wet wipes and sanitary products including absorbent undergarments such as disposable diapers; •coated tissue products or tissue products laminated with other materials than tissue paper; and •products as referred to in Directive 76/768/EEC.
Copying and Graphic, Newsprint Paper	*(Paper suitable for printing or other graphic purposes)* Comprise sheets or reels of not converted, unprinted blank paper. It will include paper made from pulp and used for writing, printing newspapers and other printed products.	•paperboard intended for packaging conversion; •thermally sensitive paper; •photographic and carbonless paper; •packaging and wrapping paper; and •fragranced paper.

Questions C&G, NS

Q: Should the scope and definition of newsprint paper be merged with that of copying and graphic paper as proposed?

Q: Should the weight based upper grammage be removed?

Q: Should 'not converted board' also be removed from the scope for copying and graphic paper merged with newsprint paper?

Q: Should 'paperboard intended for packaging conversion' be included in the list of excluded products from the scope of copying and graphic paper merged with newsprint paper?

Q: Is the new proposed name for the merged copying, graphic and newsprint paper product group of 'Paper suitable for printing or other graphic purposes' suitable and appropriate?

QuestionsTS

Q: Should the scope of tissue paper be expanded to include non-coated mats, tablecloths, non-sanitary napkins and other such products?

Q: Should the scope of tissue paper continue to include printed, coloured and/or fragranced tissue paper products?

Q: If the scope for tissue paper will continue to include printed tissue paper products, should additional wording be proposed on the printing inks (as is currently the case in the Commission Decision 2012/481/EU on the EU Ecolabel criteria for printed paper under Criterion 2 on Excluded or limited substances and mixtures, part (f) on Printing inks, toners, inks, varnishes, foils and laminates (European Commission, 2012b))?

Q: Should the scope of tissue paper be clarified to clearly exclude tissue paper products such as disposable diapers that are absorbent undergarments making reference to the Commission Decision 2014/763/EU?

B2B labelling

Objectives:

1. Facilitate B2B communication;
2. Possible increase the EU Ecolabel uptake

Proposals:

Option I - Introducing a new independent set of criteria specific to pulping process

- Possible consumer confusion - pulp is not a consumer good
- Most provisions would be identical for different paper products.

Option II - Including a provision for business-to-business (B2B) communication on intermediate products within the existing paper product criteria

- Pulp cannot be awarded EU Ecolabel but can be recognised/certified as manufactured according to EU Ecolabel provisions
- Organising verification of pulping process and certificaion of the compliance with the criteria
- Organising information flow between pulp and paper manufacturer (e.g. specific website under EU Ecolabel)
- How to handle integrated pulp and paper mills

Nordic Swan approach - Modular System

1. Basic Module - fibre sourcing, emissions to air and water and energy use;
2. Chemicals Module - chemicals used in the process and general restrictions that are placed on those chemicals.
3. Supplementary module (product specific)

Pulping process needs to meet requirements of modules 1 and 2

It is not permitted to use the Nordic Ecolabel logo on the market pulp so as to avoid any confusion, because technically it is not a final product.

Paper producers that apply for the Nordic Ecolabel are provided a list of approved pulps. Pulps that have been inspected and approved by the Nordic Ecolabelling can be marketed as such in product catalogues and on websites.

Questions

1. Which is degree of interest from market pulp suppliers about this?

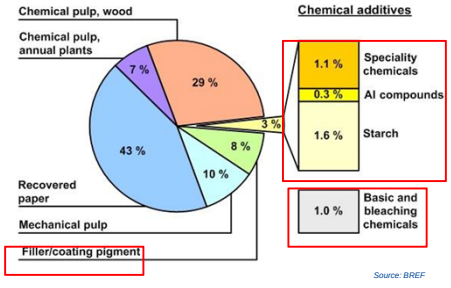
2. What is the opinion of Competent Bodies about separate pulp mill audits? Would it follow existing fee structures for licenced products?

3. The key roles and responsibilities for maintaining any central database of approved pulp suppliers?

Criterion 4. Excluded or limited substances and mixtures

General - 1

Materials used in paper production



General - 2

Process chemicals
- Retention agents
- Drainage aids
- Fixatives
- Defoamers/deaerators
- Dispersants
- Synthetic sizing agents
- Biocides
- Cleaners
- Bleaching agents
- Deinking agents

Functional chemicals
- Mineral fillers/pigments (talc, kaolin, calcium carbonate, clay etc.)
- Starch
- Dyes (Basic, Direct, pigment dispersions)
- Optical brightening agents
- Synthetic strengthening agents
- Crosslinking agents

Coating chemicals
- Synthetic binders,
- Coating additives,
- Rheology modifiers,
- Starch

- **Optimise *process stages***
- **Not intended to remain in final product**

- **Optimise *paper properties***
- **Often intended to remain in final product**

Existing/new criteria

Criterion		Copying and Graphic Paper	Newsprint Paper	Tissue Paper
a) CLP restrictions	#1	X / X	X / X	_ / X
b) SVHC restrictions		X / X	X / X	_ / X
c) Chlorine	#2	X / X	X / X	X / X
d) APEOs		X / X	X / X	X / X
e) Residual monomers		X / X	X / X	_ / X
f) Surfactants		X / X	X / X	X / X
g) Biocides	#3	X / X	X / X	X / X
h) Azo dyes		X / X	X / X	X / X
h) Dyes/pigments: heavy metals		X / X	X / X	X / X
h) Dyes: ionic impurities		X / X	X / X	_ / X
i) Wet strength agents	#4	_ / _	_ / _	X / X
j) Softeners, lotions, fragrances and additives		_ / _	_ / _	X / X
k) Residual substances		_ / _	_ / _	X / X

Take questions in four batches #1-4

New areas highlighted in yellow

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Parts a) and b) - 1

Parts a) and b): CLP and SVHC restrictions:
(Link to articles 6(6) and 6(7) in Regulation 66/2010)

6(6): cannot award EU Ecolabel to goods ***containing*** substances or mixtures that are toxic, hazardous to the environment, CMR or with Article 57 properties…

- Problematic requirement: new for tissue paper (pre-2010)
- How to verify?
- What if substances react / change their properties during processing?
- Need for a common interpretation → haz. subs. task force
- "Containing" considered as ***>1000 mg/kg*** in paper product

6(7): makes scope for derogation from 6(6) but only if no less hazardous and technically viable alternative exists.

- Case by case basis.
- Distinguishes between haz. substances (more open) & SVHCs (stricter).

Parts a) and b) - 2

a) Restriction of CLP classified substances and mixtures

The product shall not contain substances or mixtures meeting the criteria for classification with the hazard statements in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council specified below in concentrations higher than 0.10% (weight by weight) or other specific concentration limits as per Article 10 of Regulation (EC) No 1272/2008:

Group 1 hazards: Category 1A or 1B Carcinogenic, Mutagenic and/or Toxic for Reproduction (CMR): H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df

Group 2 hazards: Category 2 CMR: H341, H351, H361f, H361d, H361fd, H362; Category 1 aquatic toxicity: H400, H410; Category 1 and 2 acute toxicity: H300, H310, H330; Category 1 aspiration toxicity: H304; Category 1 Specific Target Organ Toxicity (STOT): H370, H372, Category 1 Skin Sensitiser: H317.

Group 3 hazards: Category 2, 3 and 4 aquatic toxicity: H411, H412, H413; Category 3 acute toxicity: H301, H311, H331, EUH070; Category 2 STOT: H371, H373. Other EU hazard classes: EUH029, EUH031, EUH032, EUH059, EUH070.

Assessment and verification: the applicant shall prove compliance with these criteria by providing data on the amount (kg/ADT paper produced) of substances or mixtures used in the process and by demonstrating that the substances or mixtures referred to in this criterion are not retained in the final product above the concentration limits specified. The concentrations of substances and mixtures shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006.

Parts a) and b) - 3

b) Restriction of substances of very high concern

The product shall not contain substances that have been identified according to the procedure described in Article 59(1) of Regulation (EC) No 1907/200 6 and included in the Candidate List for SVHCs in concentrations higher than 0.10% (weight by weight).

No derogation from this requirement shall be given to Candidate List SVHCs present in the product at concentrations higher than 0.10% (weight by weight).

Assessment and verification: the list of substances identified as substances of very high concern and included in the candidate list in accordance with Article 59 of Regulation (EC) No 1907/2006 can be found here:

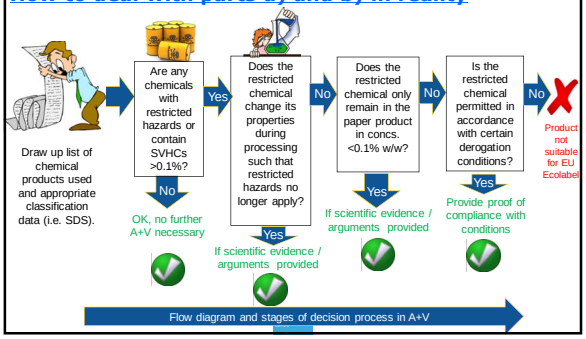
http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

Reference to the list shall be made on the date of application.

The applicant shall prove compliance with this criterion by providing data on the amount (kg/ADT paper produced) of substances used in the process and by demonstrating that the substances referred to in this criterion are not retained in the final product above the concentration limits specified. The concentration shall be specified in the safety data sheets in accordance with Article 31 of Regulation (EC) No 1907/2006.

Parts a) and b) - 4

How to deal with parts a) and b) in reality



Questions a) and b)

Q. Are any license holders / Competent Bodies willing and able to share lists of chemicals used in the paper production process?

Q. Any interested stakeholders who could actively contribute to a small sub-group focused solely on chemical criteria? Principal tasks would be:

- *Identify chemicals of greatest concern in process*
- *Consider the need for possible derogations*
- *Consider how to define when a chemical is considered to have undergone sufficient changes during processing so as to no longer exhibit the original restricted hazards and/or no longer be present in the paper product at concentrations >0.1%*

Q. In what group (1, 2 or 3) should the following hazard statements be placed: EUH029, EUH031, EUH032, EUH059 and EUH070?

Q. Should the restriction of SVHCs be extended to mixtures used during processing (easier to verify) or only to those mixtures where SVHCs are likely to remain in the final product?

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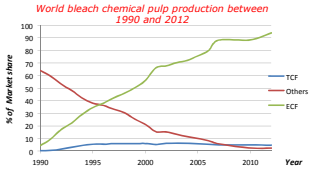
Criterion 4c) Chlorine

Chlorine gas shall not be used as a bleaching agent. This requirement does not apply to chlorine gas related to the production and use of chlorine dioxide.

Assessment and verification:
The applicant shall provide a declaration from the pulp producer(s) that chlorine gas has not been used as a bleaching agent. Note: while this requirement also applies to the bleaching of recycled fibres, it is accepted that the fibres in their previous life-cycle may have been bleached with chlorine gas.

- No change from existing criteria
- i.e. ECF or TCF pulp is okay
- Market data suggests TCF is not emerging or displacing ECF

World bleach chemical pulp production between 1990 and 2012



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Criteria 4d) and e)

Criterion 4d) APEOs

Alkylphenol ethoxylates or other alkylphenol derivatives shall not be added to cleaning chemicals, de-inking chemicals, foam inhibitors, dispersants or coatings. Alkylphenol derivatives are defined as substances that upon degradation produce alkyl phenols.

Assessment and verification:
The applicant shall provide a declaration(s) from their chemical supplier(s) that alkylphenol ethoxylates or other alkylphenol derivatives have not been added to these products.

No change to APEO exclusion

Criterion 4e) Acrylamide

Acrylamide shall not be present in coatings, retention aids, strengtheners, water repellents or chemicals used in internal and external water treatment in concentrations higher than 700 ppm (calculated on the basis of their solid content).
The competent body may exempt the applicant from these requirements in relation to chemicals used in external water treatment.

Assessment and verification:
The applicant shall provide a declaration of compliance with this criterion, together with appropriate documentation (such as Safety Data Sheets).

Major change to acrylamide (residual monomers) criterion

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Criterion 4e)
Acrylamide

Criterion has been simplified by removing 100ppm limit for all "residual monomers". Main reasons for this:

- Concentration limits for residual classified monomers in the existing criteria are very low (100ppm) and unlikely to have any influence on the CLP classification of the mixture;
- They are below the general threshold set in the criterion on presence of hazardous substances in the final products (0.10% weight by weight);
- The extent to which the residual monomers will remain in the final product is considered to be extremely small;
- By going significantly beyond the minimum requirements of CLP and REACH legislation, additional verification efforts will be needed;
- The criterion appears to be especially stringent on residual monomers with the less severe hazard classifications such as H412 and H413.

Questions: c), d) & e)

Chlorine

Q. Should ECF bleaching only be permitted in line with the use of certain technologies and/or chlorate monitoring? Or can this be considered to be already controlled to a satisfactory extent by AOX criteria?

Q. Based on energy and chemical requirements, are there any LCA-based arguments that can be used to justify/dismiss the exclusion of ECF in favour of TCF?

Q. Are there any technical arguments (in terms of pulp or paper quality) that could be used to justify the continued use of ECF?

Q. Would it be feasible to require TCF (or PCF) for Newsprint Paper based on current market trends and industry practice?

Acrylamide

Q. How is "calculated on the basis of their solid content" interpreted in applications?

Q. What residual monomers were targeted by this original 100ppm limit?

Criterion 4f)
Surfactants

All surfactants used shall demonstrate ready or inherent ultimate biodegradability (see test methods and pass levels below).

Assessment and verification:
The applicant shall provide a declaration of compliance with this criterion together with the relevant safety data sheets or test reports for each surfactant which shall indicate the test method, threshold and conclusion stated, using one of the following test method and pass levels:

- For ready biodegradability: OECD No 301 A-F (or equivalent ISO standards) with a percentage degradation (including absorption) within 28 days of at least 70% for 301 A and E, and of at least 60% for 301 B, C, D and F.
- For inherent ultimate biodegradability: OECD 302 A-C (or equivalent ISO standards), with a percentage degradation (including adsorption) within 28 days of at least 70 % for 302 A and B, and of at least 60 % for 302 C.

Only minor changes with terminology (e.g. inherent ultimate)

But potentially significant change by applying to ALL surfactants and not only those used in deinking processes

Criterion 4g)
Biocidal products

The active substances in biocidal products used to counter slime-forming organisms in circulation water systems containing fibres shall not be potentially bio-accumulative.
For the purposes of this criterion, the potential to bio-accumulate shall be characterised by log Kow (log octanol/water partition coefficient) > 3,0 or an experimentally determined bioconcentration factor (BCF) > 100.

Assessment and verification:
The applicant shall provide a declaration of compliance with this criterion together with the relevant material safety data sheet or test report which shall indicate the test method, threshold and conclusion reached, using the following test methods: OECD 107, 117 or 305 A-E.

Only minor changes with terminology (e.g. biocidal products) and to make a clear distinction from CLP definition for bioaccumulative

Criterion 4h) Dyes, dyestuffs & pigments

The following requirements shall be met for dyes, dyestuffs and pigments:

i. None of the aromatic amines listed in Directive 2002/61/EC shall be used during the paper production process and the use of other dyes that may cleave to form these aromatic amines during processing shall be avoided. (See Appendix I for a full list of banned aromatic amines and an indicative list of dyes that may cleave during processing to form these restricted aromatic amines).

ii. With the exception of copper phthalocyanine, dyes or pigments based on: aluminium, silver, arsenic, barium, cadmium, cobalt, chromium, copper, mercury, manganese, nickel, lead, selenium, antimony, tin or zinc shall not be used.

iii. The levels of ionic impurities in the dyestuffs used shall not exceed the following: Silver 100 ppm; Arsenic 50 ppm; Barium 100 ppm; Cadmium 20 ppm; Cobalt 500 ppm; Chromium 100 ppm; Copper 250 ppm; Fe 2,500 ppm; Mercury 4 ppm; Manganese 1,000 ppm; Nickel 200 ppm; Lead 100 ppm; Selenium 20 ppm; Antimony 50 ppm; Tin 250 ppm; Zinc 1,500 ppm.

Assessment and verification: The applicant shall provide a declaration of compliance with the requirements of this criterion, supported by safety data sheets or other relevant documentation from chemical suppliers.

Some potentially significant changes. Merging, how to refer to restricted aromatic amines and consistency with heavy metal restrictions for metal complexes and ionic impurities.

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Questions: f), g) & h)

Surfactants

Q. Can all surfactants used in the paper production process be readily/inherently biodegradable?

Q. From experience, are there any issues with biodegradability testing, especially with OECD 301?

Q. Is there any experience with the reporting of results from equivalent ISO standards?

Biocides

Q. Added value of requesting that active substances and biocidal products used must be approved or currently under evaluation in accordance with the BPR (EC) No 528/2012?

Q. With tissue paper, added value of this text (or similar): "No biocidal products shall be applied to the Tissue Paper product with the intention of providing a disinfective effect on the final product".

Q. Are biocidal products commonly used during the shipment and storage of mother reels and market pulp?

Dyes, dyestuffs and pigments

Q. Any experience with testing paper products for restricted aromatic amines?

Q. Is it reasonable to expand the list of restricted metals in dyes and pigments to align with the metals banned as ionic impurities in dyestuffs?

Q. With the limits for ionic impurities, limits are expressed as ppm. Should this be interpreted as mg/kg, mg/l or µL/L (i.e. w/w, w/v or v/v)? What is normal practice?

Q. Are phthalates a concern in dyes, dye stuffs and pigment dispersions? If so, are any classified phthalates used in these applications?

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Criterion 4i) Wet strength agents — Tissue Paper only

Wet strength agents must not contain a cumulative total in excess of 0,7 % (on a dry content basis) of the following organo-chlorine substances:

epichlorohydrin (ECH) CAS No 106-89-8,

1,3-dichloro-2-propanol (DCP) CAS No 96-23-1 and

3-monochloro-1,2-propanediol (MCPD) CAS No 96-24-2,

Wet strength agents that contain glyoxal must not be used in the production of the eco-labelled tissue paper.

Assessment and verification:

The applicant shall provide a declaration, supported by documentation from chemical supplier(s), that the content of the epichlorohydrin (ECH), 1,3-dichloro-2-propanol (DCP) and 3-monochloro-1,2-propanediol (MCPD), calculated as the sum of the three components and related to the dry content of the wet strength agent is not higher than 0,7 %.

No major changes to the criterion, only minor rewording and restructuring

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Criterion 4j) Softeners, lotions and fragrances — Tissue Paper only

None of the constituent substances or mixtures in the softeners, lotions, fragrances and additives of natural origin shall be classified as hazardous to the environment, sensitising, carcinogenic or mutagenic with hazard statements H317, H334, H340, H350, H400, H410, H411, H412 or H413 (or any combination thereof) in accordance with Regulation (EC) No 1272/2008.

Any ingredient added to the product as a fragrance must have been manufactured, handled and applied in accordance with the code of practice of the International Fragrance Association. Fragrances shall not contain any substances that are listed in Annex III to Regulation (EC) No 1223/2009 of the European Parliament and of the Council in sufficiently high concentrations as to require them to be labelled on a product/packaging, as per the conditions set out in the same Regulation (EC) No 1223/2009.

Assessment and verification:

The applicant shall provide a list of softeners, lotions and additives of natural origin that have been added to the tissue product together with a declaration for each added preparation that the criterion is met.

A declaration of compliance with each part of this criterion shall be provided to the Competent Body by the fragrance manufacturer.

No major changes initially proposed, but discussion needed!

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Criterion 4k) Residual substances

Tissue Paper only

Where tissue paper is manufactured entirely or partially from de-inked pulp, the final tissue paper shall not contain more than:

- 1 mg/dm2 formaldehyde according to EN 1541 (cold water extract test).
- 1.5 mg/dm2 glyoxal according to DIN 54603
- 2 mg/kg pentachlorophenol (PCP) according to EN ISO 15320 (cold water extract test)

Assessment and verification:

The applicant shall provide a declaration of compliance with this criterion, supported by relevant laboratory test reports.

No major changes proposed but has been significantly restructured (i.e. product safety → haz subs + fitness for use).

Need to clarify more details of the test conditions (i.e. cold or hot)

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Questions: i), j) & k)

Wet strength agents (WSAs)

Q. Would a stricter limit on ECH etc. better reflect current best practice in Tissue Paper production?

Q. Are WSA criteria applicable to Copying and Graphic Paper or Newsprint Paper? The Nordic Chemical Module has a general requirement of 0.01% for ECH, DCP and CPD, which is more stringent than what they have for Tissue Paper (0.05%)?

Q. Since 2009, have any other substances in WSAs been identified which should also be restricted?

Softeners, lotions and fragrances

Q. What is the range of softeners, lotions and fragrances typically used in Tissue Paper products, at what stages of production are they added and what % of the product weight do they represent?

Q. Should fragrances continue to be permitted in EU Ecolabel Tissue Paper? If YES, what is the most up to date and relevant legal framework for fragrances? Should a specific 0.01% conc. limit should or could be applied to all Annex III substances?

Q. What are the challenges with implementing this criterion in existing Tissue Paper licences?

Residual substances

Q. Should this apply equally to CGP and NP if recycled fibres used? Or is it an exposure issue only?

Q. Should the hot or cold extraction method be specified for formaldehyde and PCP?

Q. Are there any international equivalents to DIN 54603 that could be used for glyoxal analysis?

Q. Should testing only be triggered above a set minimum recycled content (e.g. 25%) and/or only when certain grades of recovered paper are used?

Q. When deemed that testing should be carried out, what would be an appropriate sample frequency (either per unit time or per production volume/batch)?

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Criterion 2. Energy use

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Energy use–current criterion(1)

Current criterion

	Newsprints 2012/448/EU	Copying and Graphic papers (2011/332/EU)	Tissue paper
Energy use			
(a) Electricity	The number of points shall be less than or equal to 1,5.		Lower than 2.200 kWh/ADT of paper produced.
(b) Fuel (heat)	The number of points shall be less than or equal to 1,5.		

For integrated mills, if only a combined figure (pulp and paper) is available, the electricity values for pulp(s) shall be set to zero and allocated to paper production.

(a) For each pulp or paper i used, the related electricity consumption (Epulp,i expressed in kWh/ADT) shall be calculated as follows:
Epaper/pulp,i = Internally produced electricity + purchased electricity – sold electricity

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

(b) For each pulp or paper i used, the related fuel consumption (Fpulp,i expressed in kWh/ADT) shall be calculated as follows:
Fpulp/paper,i = Internally produced fuel + purchased fuel – sold fuel – 1,25 × internally produced electricity

$$P_F = \frac{\Sigma_{i=1}^{n} [pulp,i \times F_{pulp,i}] + F_{paper}}{\Sigma_{i=1}^{n} [pulp,i \times F_{ref\,pulp,i}] + F_{ref\,paper}}$$

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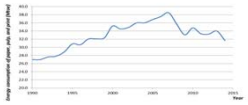
Criterion 2. Energy use – reference values

Energy consumption (1)

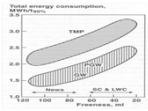
EU- 28 Energy Statistics- total energy consupmtion of paper, pulp, and print (Mtoe)



- Pulp and paper industry has a large potential for creating energy savings . In Europe, the industry produces about 51 % of the electricity it consumes, most (95,2 %) from combined heat power installations (CHP);
- The total energy consumption decline since 2006 whereas paper and pulp production has increased;
- Limited comparability between different installations due their specificity;
- Benchmarking at process level by the comparison of specific energy consumption (SEC) of similar processes within different paper mills.
- BREF defines "Best practice energy benchmarking" as the process of comparing actual steam and energy consumption with the levels of best practice used in the mills that apply similar processes and manufacture similar products.

Energy consumption (2)

Order of power consumption: TMP> PGW/GW>RCF



Energy intensity is related to the technical requirements of final product :

- GW - C&G paper 2 200 kWh/t ;
  -Newsprint 1 600 kWh/t;
- TMP -C&G 3 600 kWh/t ;
  -Newsprints 2 500 kWh/t ;
- Heat recovery in TMP can lead to lower overall energy consumption than GW pulping.

Production *of tissue paper* requires the lowest intensity in mechanical refining, copying and printing paper the highest and newsprint paper requires some 40% less electricity than production of copying and printing paper.

Level of integration:
•GW and TMP pulp mills use to be integrated with a paper mill;
•Integrated TMP enables to reuse the heat from refiners for the production of steam and better energy efficiency.
•CTMP is often produced in connection with a paper or board mill due to the possibility to reuse the heat from refiners for the production of steam and better energy efficiency. However, CTMP is in some cases (approximately 10 mills in Europe) manufactured as market pulp.

Is there a need to define energy consumption reference value for market pulp from non-integrated sites (GW and TMP)?

Energy consumption (3)

Pulp grade	Fuel kWh/ADT Freference		Electricity kWh/ADT Ereference	
	Non-admp	admp	Non-admp	admp
Chemical pulp	3750	4750	750	750
Thermomechanical pulp (TMP)	0	?	?	?
Groundwood pulp (including Pressurised Groundwood)	0	?	?	?
Chemithermomechanical pulp (CTMP)	0	?	?	
Recovered fibre pulp	?	?	?	?
Paper grade	Fuel	kWh/t		Electricity kWh/t
Newsprint paper grade		1700		750
Copying and graphic paper grade		1700		750
Tissue paper grade		1800		1030

Methodology:

- Comparison of Ecolabel and Nordic Swan energy reference values with the benchmark values included in ETS and BREF;
- Proposal: to align reference levels for chemical pulp and paper grade with the Nordic Swan requirements;
- Mechanical pulp–differences in energy consumption within pulping technique, lack of available data

Criterion 1. Energy use – calculation formula

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Energy use–current criterion(2)

- $Fpulp_{,i}$ need not be calculated for mechanical pulp unless it is market air dried mechanical pulp containing at least 90 % dry matter
- The amount of fuel used to produce the sold heat shall be added to the term 'sold fuel' in the equation;
- Total heat energy includes all purchased fuels. It also includes heat energy recovered by incinerating liquors and wastes from on-site processes (e.g. wood waste, sawdust, liquors, waste paper, paper broke), as well as heat recovered from the internal generation of electricity — however, the applicant need only count 80 % of the heat energy from such sources when calculating the total heat energy.
- Where steam is generated using electricity as the heat source, the heat value of the steam shall be calculated, then divided by 0, 8 and added to the total fuel consumption.
- Energy used in the transport of raw materials, as well as conversion and packaging, is not included in the energy consumption calculations. Electricity used for waste-water treatment and – for tissue paper – air cleaning is not included.

Fuel Consumption = Internally produced fuel +0,8 x bleed steam (a) + 0,8 x steam from electrode boilers(b) + purchased fuel – sold fuel – 1,25 × internally produced electricity(c) – sold heat(d)

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Current calculation

Two parts (fuel consumption = a + b):

a) Fuel consumed = fuel generated + fuel purchased – fuel sold
Logical, understandable

b) Fuel consumed = $0{,}8 \cdot steam_{CHP} + 0{,}8 \cdot wastes_{onsite} + 1{,}25 \cdot steam_{electrode\ boiler}$ - $1{,}25 \cdot power\ prod._{onsite}$ – heat sold

- *Q: What multiplication factors represent? (Reference to boiler efficiency? Promoting CHP and wastes utilization?)*
- *Q: Is the formula complete? (e.g. heat recovered from mechanical pulping supplied to paper machine)*

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Allocation

Assuming the factor 1,25 refers to boiler efficiency of 80%, possible modification should be discussed:

- For fuel utilized in CHP: electric efficiency for high pressure steam systems in modern pulp mills is approximately 35%. Taking into account a boiler efficiency of 75% fuel requirement per unit of produced electricity would amount to 1/(35% x 75%) = 3,8 GJfuel/Gje;
- For fuel utilized in condensing steam cycles or gas turbines/gas engines without heat recovery, the modified factor should be related to the actual net electric efficiency;
- The mandatory allocation rule for calculating fuel consumption is not related to actual CHP unit efficiencies, fuel consumption related to 'internal generation of electricity' may be grossly underestimated. CHP units has a 1,25/0,8 = 1,56-fold higher allocation factor than heat;
- For heat supplied to external consumers, no recalculation factor for associated fuel consumption is included;

Possible modification of allocation rule:

- Based on actual efficiencies of boilers, furnaces and co-generation units
- The actual boiler efficiency (approximately 75%) is proposed to be applied for calculating fuel consumption.

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Allocation

Example: ETS consistent calculation rule

ETS rules for - larger mills already report under ETS:

- Efficiency benchmark for heat generation (stand alone boiler
- CHP: heat benchmark as reference for produced heat
- Heat sales: heat benchmark as reference for supplied heat

Part b of fuel consumption would become:

b) Fuel consumed = $\frac{1}{\eta_{CHP}} \cdot steam_{CHP} + \frac{1}{\eta_{boiler}} \cdot wastes_{onsite} + 1{,}01 \cdot steam_{electrode\ boiler}$

−1,11 heat sold

For recovery boiler/bark boiler benchmark of 75% (or 80%) efficiency is representative, for electrode boiler 99% to 99,9%, 90% efficiency (see ETS) for other boilers.

Difficult to implement?

- Ecolabel: The applicant shall provide detailed calculations showing compliance with this criterion, together with all related supporting documentation..
- ETS Decision: Member States should ensure that data collected from the operators and used for allocation purposes is complete, consistent and presents the highest achievable accuracy .

Allocation

Allocation methodology for attribution of emissions and fuel consumption for CHP?

a) Fuel consumption:
[0,8·steam$_{CHP}$] and [-1,25·power prod.$_{onsite}$] →
ratio power ÷ heat = [1,25/0,8] ÷ 1 = 1,56 ÷ 1

b) Emissions related to CHP with electricity sales:
[2 × MWh$_e$] / [2 × MWh$_e$ + MWh$_{th}$] → ratio power ÷ heat = 2 ÷ 1

- If adopting ETS calculation rules, per unit of fuel (e.g. GJ) for CHP with η_{th} and η_e efficiencies:
  $1{,}1 \cdot \eta_{th}$ to heat → rest of fuel consumption to electricity.
- Example for 1 GJ fuel, η_{th} = 50%, η_e = 35%
  1,1 · 0,5 = 0,55 of emissions to heat, 0,45 to electricity

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Questions

Q: The question may be put forward whether waste water treatment (and air/flue gases) should not be included in the calculation of electricity consumption.

Q. Shall energy calculation methodology be re-design including modified factors which should be based on the actual thermal and electric efficiencies of heat producing equipment?

Q. Should allocation methodology for attribution of emissions and fuel consumption for CHP be re-design?

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Criterion 5. Waste Management

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Waste management (1)

Waste Handling and Minimisation

All pulp and paper production sites shall demonstrate to have a system for handling of waste arising from the production of the licensed product.

The application should provide a comprehensive waste minimisation and management plan that details the system and includes information on the following points:

- Procedures for waste prevention;
- Procedures for waste separation, reuse and recycling;
- Procedures for the safe handling of hazardous waste;
- Continuous improvement objectives and targets.

Assessment and verification:
the applicant shall provide a waste minimisation and management plan for each of the sites concerned and a declaration of compliance with the criterion. The declaration should inform about the amount of waste generated per each class/category.

Typical solid wastes type and sources

Source	Waste type	Waste characteristic
Wastewater treatment plant	Sludge	• Organic fraction: wood fibres, biosludge • Inorganic fraciton: clay, calcium, etc. • 20-60% solid content
Caustic process	Dregs, muds	Green liquor dregs consisting of non-reactive metals and insoluble materials, lime mud
Power Boiler	Ash	Inorganic compounds
Paper mill	Sludge	Colour waste, fibre clay including slowly biodegradable organic substances such as cellulose, lignin
Rejects		

Waste management (2)

Typical ranges of solid residues (wet weight) sent to disposal from different types of pulp and paper production (*Source: BREF*)

Production type	Waste to disposal (kg/tonne)
Non-integrated kraft mill	0 – 50
Kraftliner	0.5 – 5
Integrated kraft paper	0 – 20
Integrated sulphite paper	0.5 – 5
Integrated board	0 – 15
Wood-containing printing paper	0 – 5
Non-integrated paper mill	0 – 10

The specific amount of residue is calculated per tonne of total production, i.e. in the case of integrated manufacturing, on the total amount of pulp and paper produced on the site.

Questions:

Q: Is it feasible to set maximum waste disposal limits?
Q: Is there justification for having a higher limit for RCF pulp production?
Q: Is it feasible to provide waste limits on an end product basis as well as a pulp type basis?

1st AHWG (7-8th of June)

AGENDA Day 1: Tuesday, 7th June 2016

		SCHEDULE
1.	*Welcome and introduction* *Work programme and timeline, summary of scope and preliminary evidence base.* *Summary of the main findings from Preliminary report*	09:30 – 11:00
	Coffee break	11:00 – 11:15
2.	*Paper product groups scope and definitions*	11:15 – 12:15
3.	*General hazardous substance/mixture criteria: Draft criterion 4*	12:15 – 13:30
	Lunch break	13:30 – 14:30
4.	*General hazardous substance/mixture criteria: Draft criterion 4 (continued)*	14:30 – 15:15
5.	*Energy use: Draft criterion 2*	15:15 -16:00
	Coffee break	16:00 – 16:15
6.	*Energy use: Draft criterion 2 (continued)*	16:15 – 17:00
7.	*Waste Management: Draft criterion 5*	17:00 – 17:30

Criterion 1. Emission to Water

Criterion 1

Emission to water and air	Newsprints 2012/448/EU	Copying and Graphic papers (2011/332/EU)	Tissue paper
(a) COD, Sulphur (S), NOx, Phosphorous (P)	• None of the individual points PCOD, PS, PNOx, PP shall exceed 1,5. The scoring system is based on referenced values. • The total number of points shall not exceed 4,0. • Allocation is considered for the emission of NOx and S electricity and heat co-generation		
b)AOX (Absorbable Organic Halogen)	Shall not exceed 0,17 kg/ADT		*<0,12 kg/ADT paper* the weighted average from the pulps production. *<0,25 kg/ADT pulp* per each individual pulp
(c) CO2	• CO2 emissions from non-renewable sources shall not exceed 1 000 kg/tonne of paper produced. • For non-integrated mills the emissions shall not exceed 1 100/tonne. • Calculated as the sum of the emissions from the pulp and paper production.		< 1 500 kg/ADT paper produced (for non-renewable sources) Converting, transport shall not be included in the calculations.

Monitoring

- BAT is to monitor emissions in accordance with EN standards. If EN standards are not available, ISO, national or other international standards which ensure the provision of data of an equivalent scientific quality should be used.
  - *COD monitoring (no EN standard available): ISO 15705:2002 and ISO 6060:1989*
  - *For COD several Member States use national standards for regulatory purposes e.g. NEN 6633 in NL, NF T 90 101 in FR, or DIN 38409-41 in DE)*
- The JRC Reference Report on Monitoring (ROM) of emissions to air and water from IED installations (Final draft) is available online (EIPPC website);
- Continuous methods for air emission analysis : EN 14792:2005

Calculation methodology

- Emission is expressed for each parameters in terms of points calculated on the base of reference values;
- Scores for each parameters should be lower than 1,5; and the total number of points shall not exceed 4,0.
- When various pulps are mixed, the individual contribution from each pulp should be expressed as weighted share;
- For integrated mills if combined figures are available the emission shall be allocated to the paper mill (including pulp and paper production).

Example

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

Q. Should we under revised criterion refer to test methods listed in ROM Document ?

Chemical Oxygen Demand

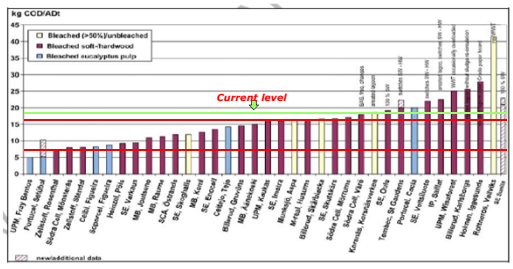
COD

Current and proposed new reference levels for specific emissions of COD (kg COD /ADt)

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	18	18	18	7 - 16	7 -16	7 - 16
Bleached sulphite pulp	25	25	25	25	25	25
Unbleached chemical pulp	10	10	10	2,5 - 8	2,5 -8	2,5 - 8
CTMP	15	15	15	12-15	12-15	12-15
TMP/ground wood pulp						
-TMP	3	3		0,9 – 3	0,9 – 3	N.R.
-Ground wood	3	3		0,9 – 3	0,9 – 3	N.R.
Recovered fibre pulp	2	2	3	0,9 - 2	0,9 - 2	0,9 - 3
Paper production						
- non-integrated mills	1		2	0,15-1	0,15-1	0,15-1
- other mills	1		2	0,15-1	0,15-1	0,15-1,5

COD

Total COD emission load from bleached kraft pulp mills after biological treatment



Source: BREF, 2015

COD –chemical and CTMP

Current and proposed new reference levels for specific emissions of COD (kg COD /ADt)

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	18	18	18	7 - 16	7 -16	7 - 16
Bleached sulphite pulp	25	25	25	25	25	25
Unbleached chemical pulp	10	10	10	2,5 - 8	2,5 -8	2,5 - 8
CTMP	15	15	15	12-15	12-15	12-15
TMP/ground wood pulp						
-TMP	3	3		0,9 – 3	0,9 – 3	N.R.
-Ground wood	3	3		0,9 – 3	0,9 – 3	N.R.
Recovered fibre pulp	2	2	3	0,9 - 2	0,9 - 2	0,9 - 3
Paper production						
- non-integrated mills	1		2	0,15-1	0,15-1	0,15-1
- other mills	1		2	0,15-1	0,15-1	0,15-1,5

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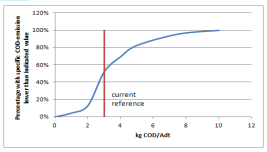
COD

Mechanical

- 3 kg COD/ADt is representative for approx. 50% of mills;
- BAT – AELs - 0,9 – 4,5 kg COD/ADt;
- Proposal: 0,9-3,0 kg COD/ADt



RCF

- 50% of mills discharge less than 2 kg COD/ADt , almost 90% less than 3 kg/Adt;
- BAT-AELs with deinking on site: 0,9 – 3,0 kg COD/ADt, and 0,9 – 4,0 kg COD/ADt for tissue paper;
- Proposal: 0,9-2,0 for copying and graphic papers and newsprints, and 0,9-3.0 for tissue paper.

Paper mills

- BAT-AELs (non-integrated) 0,15- 1,5 kg/Adt. For tissue paper the upper value is suggested to be raised to 1,5 kg COD/ADt

Source: BREF, 2015

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P

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	0,045	0,045	0,045	0,01-0,03	0,01-0,03	0,01-0,03
Bleached sulphite pulp	0,045	0,045	0,045	0,01–0,03	0,01–0,03	0,01–0,03
Unbleached chemical pulp	0,04	0,04	0,02	0,01-0,02	0,01-0,02	0,01-0,02
CTMP	0,01	0,01	0,01	0,001 – 0,01	0,001 – 0,01	0,0025 – 0,0045
TMP/ground wood pulp						
-TMP	0,01	0,01		0,001 – 0,01	0,001 – 0,01	N.R.
-Ground wood	0,01	0,01		0,001 – 0,01	0,001 – 0,01	N.R.
Recovered fibre pulp	0,01	0,01	0,01	0,001 – 0,01	0,001 – 0,01	0,001 – 0,01
Paper production						
-non-integrated mills	0,01	0,01	0,01	0,003 – 0,0045	0,003 – 0,0045	0,003 – 0,0045
-other mills	0,01	0,01	0,01	0,003 – 0,0045	0,003 – 0,0045	0,003 – 0,0045

Water Framework Directive 2000/60/EC defined the risk concentration level for direct discharge of at 0,15 mg P/l . A limit of 0,15 mg P/l combined with a BAT waste water volume of 9 – 16 m3/ADt would suggest emission threshold of 0,0015 – 0,0025 kg

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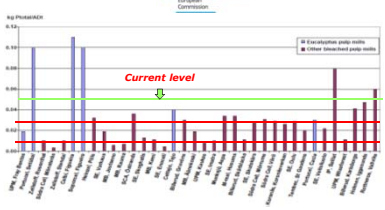
Q. Which is the most appropriate emission reference value?

100

Phosphorous

P – Sulphate



- BAT-AELs: Bleached 0,01-0,03 kg P/ADt; 0,02-0,11 kg P/ADt (Eucalyptus pulp);
- BAT-AELs: 0,01 – 0,02 kg/ADt (unbleached);
- Nordic Swan:0,03 kg/ADt;
- Proposal: 0,01 – 0,03 kg P/ADt for bleached kraft pulp, and 0,01 – 0,02 kg P/ADt for unbleached. *The specific emission threshold for eucalyptus pulp mills should be further discussed with industry stakeholders.*

P – Sulphite/Mechanical

- BAT-AELs is 0,01 – 0,05 kg P/Adt, for bleached sulphite pulp, 0,01 – 0,07 P/ADt for magnefite pulp, and 0,01 – 0,02 P/ADt for NSSC pulp;
- 0,01 – 0,03 kg P/ADt is proposed

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	0,045	0,045	0,045	0,01-0,03	0,01-0,03	0,01-0,03
Bleached sulphite pulp	0,045	0,045	0,045	0,01–0,03	0,01–0,03	0,01–0,03
Unbleached chemical pulp	0,04	0,04	0,02	0,01-0,02	0,01-0,02	0,01-0,02
CTMP	0,01	0,01	0,01	0,001 – 0,01	0,001 – 0,01	0,001 – 0,01
TMP/ground wood pulp						
-TMP	0,01	0,01		0,001 – 0,01	0,001 – 0,01	N.R.
-Ground wood	0,01	0,01		0,001 – 0,01	0,001 – 0,01	N.R.
Recovered fibre pulp	0,01	0,01	0,01	0,001 – 0,01	0,001 – 0,01	0,001 – 0,01
Paper production						
-non-integrated mills	0,01	0,01	0,01	0,003 – 0,01	0,003 – 0,01	0,003 – 0,01
-other mills	0,01	0,01	0,01	0,003 – 0,01	0,003 – 0,01	0,003 – 0,01

P – RCF/Paper mills

RCF
- Controlled by dosage of phosphates to the biological waste water treatment;
- BAT AELs RCF without deinking - 0,001 – 0,005 kg P/AD .
- BAT- AELs with deinking on site are - 0,002 – 0,01 P/ADt; 0,002 – 0,015 kg/ADt for tissue paper;
- Nordic Swan - 0,01 kg/AD;
- Proposal: 0,001 – 0,01 kg P/ADt kg

Paper mills
- Comparable with CTMP mills;
- BAT-AELs- 0,003-0,012 kg P/ADt.
- Proposal: 0,003 - 0,01 kg P/ADt

Q. Which is the most appropriate emission reference value?

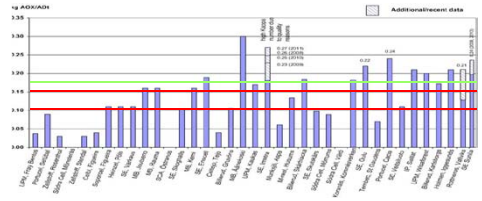
Absorbable Organic Halogens

AOX emission

The BAT –AELS into water for AOX address ECF bleached pulps and are established as follows:

- Bleached kraft pulp mill 0,0- 0,2 yearly average kg/ADt;
- Bleached sulphite and magnefite grade paper 0,5-1,5 yearly average kg/ADt;
- RCF 0,05 for wet strength paper yearly average kg/ADt;
- Integrated kraft, sulphite, CTMP and CMP pulp and paper mills, Non-integrated paper and board mill (excluding speciality paper), for decor and wet strength paper yearly average kg AOX/ADt 0,05;
- Nordic Swan threshold for the weighted average of AOX at 0.17 kg/tonne paper, and for each individual 0.25 kg/tonne.
- Test method EN ISO 9562: 2004 / monitoring frequency once a month for bleached kraft pulp, once every two months for bleached sulphite and magnefite paper grade pulp, and integrated production of paper and board from recycled fibres pulp;

AOX emission - sulphite



- In 2008/2009 around 50% of European mills that took part in the questionnaire met the AOX emission level of 0,15 AOX/kg ADt, and 27% less than 0,1 AOX/ADt;
- Proposal : 0,1 - 0,15 kg AOX/ADt.

AOX emission - proposal

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	0,17	0,17	0,25	0,10-0,15	0,10-0,15	0,10-0,15
Bleached sulphite pulp	0,17	0,17	0,25	0,17	0,17	0,17
Unbleached chemical pulp	0,17	0,17	0,25	x	x	x
CTMP	0,17	0,17	0,25	0,002 (?)	0,002(?)	0,002 (?)
TMP/ground wood pulp						
-TMP	0,17	0,17	0,25	0,002 (?)	0,002 (?)	0,002 (?)
-Ground wood	0,17	0,17	0,25	0,002 (?)	0,002 (?)	0,002 (?)
-Recovered fibre pulp	0,17	0,17	0,25	0,007	0,007	0,007
Paper production						
- non-integrated mills				0,001	0,001	0,001
- other mills				0,001	0,001	0,001

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Q. Which is the most appropriate emission reference value?

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Criterion 1. Emission to Air

111

Sulphur

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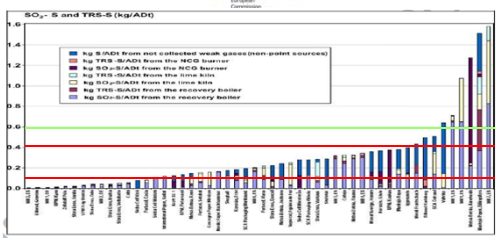
S-Chemical pulp



- Approx. 90% of mills met existing EU Ecolabel reference value of 0,6 kg S/ADT.
- 55 % of the reporting mills reported values of 0.1 -0.4 kg S/ADt
- Almost 30% plants reported emission load lower than 0,1 kg S/ADt.
- Proposal: 0.1 -0.4 kg S/ADt

S-Mechanical/CTMP/RCF

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	0,6	0,6	0,6		0.1-0,4	
Bleached sulphite pulp	0,6	0,6	0,6		0,1-0,4	
Unbleached chemical pulp	0,6	0,6	0,6		0,1-0,4	
CTMP	0,2	0,2	0,3	?	?	?
TMP groundwood	0,2	0,2		?	?	?
TMP Recovered fibre pulp	0,2	0,2	0,2	?	?	?
Paper production						
Non-integrated mills	0,3	0,3	0,03	0,003-0,18	0,003-0,18	0,003-0,18
Other mills	0,3	0,3	0,03	0,003-0,18	0,003-0,18	0,003-0,18

Mechanical/CTMP/RCF
- Nordic Swan 0,2 S ref/ADt;

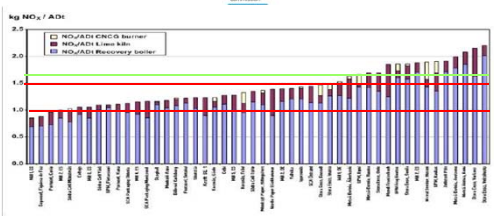
Paper production
- Nordic Swan 0,3 S ref/ADt for paper machine (coated and uncoated paper), and 0,5 ref/Adt for paper machine for speciality paper;

- Estimated benchmark at the level of 0,003-0,18 S kg/ADt (based on ETS).

Q. Which is the most appropriate reference?

NOx

NOx-Chemical pulp



- Common value for chemical pulps;
- Almost 80% of European kraft pulp mills that took part in the questionnaire met existing Ecolabel reference value for NOx emission of 1,6 kg NOx/ADt (2011);
- 58 % mills reached the range of 1 -1,5 kg NOx/ADt.

NOx

Current and proposed reference levels for specific emissions of NOx (kg/ADt)

	Current reference levels			Proposed new reference levels		
	NP	CGP	TP	NP	CGP	TP
Pulp types						
Bleached sulphate pulp	1,6	1,6	1,6	1,0-1,5	1,0-1,5	1,0-1,5
Bleached sulphite pulp	1,6	1,6	1,6	1,0-1,5	1,0-1,5	1,0-1,5
Unbleached chemical pulp	1,6	1,6	1,6	1,0-1,5	1,0-1,5	1,0-1,5
CTMP	0,3	0,3	0,3	?	?	?
TMP	0,3	0,3		?	?	?
Ground wood	0,3	0,3		?	?	?
Recovered fibre pulp	0,3	0,3	0,3	?	?	?
Paper production						
- non-integrated mills	0,8	0,8	0,5	0,03-0,24	0,03-0,24	0,03-0,24
- other mills	0,7	0,7	0,5	0,03-0,24	0,03-0,24	0,03-0,24

Mechanical/CTMP/RCF

- Nordic Swan 0,25 NOx ref/ADt;
- Combining NOx BATs emission level for gas fired boilers with the above fuel requirements gives:
  - 0,018 kg NOx/ADt for recovered fibre production in an integrated paper mill;
  - 0,085 kg NOx/ADt for market pulp.

Paper production

- Nordic Swan 0,7 NOx ref/ADt
- Estimated benchmark at the level of 0,03-0,24 NOx kg/ADt (based on ETS).

Questions

Q. Which is the most appropriate emission reference value?

Q. How to set the most appropriate ambition level EU Ecolabel benchmarks in the context of the ranges reported for BAT-AELs in the 2014 BREF document. Specific data from existing licence holders is requested to use as a starting point for discussions;

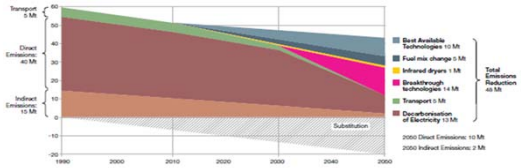
CO_2

Emission to water and air	Newsprints 2012/448/EU	Copying and Graphic papers (2011/332/EU)	Tissue paper
(a) COD, Sulphur (S), NOx, Phosphorous (P)	• None of the individual points PCOD, PS, PNOx, PP shall exceed 1,5. The scoring system is based on referenced values. • The total number of points shall not exceed 4,0. • Allocation is considered for the emission of NOx and S electricity and heat co-generation		
b)AOX (Absorbable Organic Halogen)	Shall not exceed 0,17 kg/ADT		*<0,12 kg/ADT paper* the weighted average from the pulps production. *<0,25 kg/ADT pulp* per each individual pulp
(c) CO2	• CO2 emissions from non-renewable sources shall not exceed 1 000 kg/tonne of paper produced. • For non-integrated mills the emissions shall not exceed 1 100/tonne. • Calculated as the sum of the emissions from the pulp and paper production.		< 1 500 kg/ADT paper produced (for non-renewable sources) Converting, transport shall not be included in the calculations.

CO_2

- Pulp and paper industry is covered by Emission Trading Directive 2009/29/EC;
- Direct emission accounts for 2% of the emissions under EU ETS; Indirect emissions are caused by purchased electricity (around 62 % of the total electricity consumption);
- In Europe, the industry produces about 51 % of the electricity it consumes;
- 55 % of the energy used come from biomass, and 36.2 % from natural gas (2011)
- General trend to reduce CO2 intensity of the sector
- There are no established BAT-AELS for CO2.

Emission Reduction Projection 1990 -2050 (in million tonnes)



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CO_2

EU-28 fuel-based Electricity/Heat Emission Factors for CO2

Country	IEA composite electricity/heat factors (gCO2/kWh)	Country	IEA composite electricity/heat factors (gCO2/kWh)
Austria	182.756	Italy	398.464
Belgium	248.975	Latvia	162.2356
Bulgaria	488.8623	Lithuania	114.4369
Croatia	341.4155	Luxemburg	314.782
Cyprus	758.6603	Malta	848.708
Czech Republic	543.894	Netherlands	392.079
Denmark	307.755	Poland	653.44
Estonia	751.8614	Portugal	383.544
Finland	187.118	Romania	416.6456
France	82.717	Slovakia	217.154
Germany	441.181	Spain	325.878
Greece	731.218	Sweden	39.939
Hungary	330.842	UK	486.949
Ireland	486.205	EU-28	379.9

- *The EU average carbon intensity of the electricity grid, according to MEErP methodology- 0.384 tCO2/MWhe = 0.107 tCO2/GJe (MEErP).*
- *Proposed update: 380 g CO2 fossil/kWh*

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CO_2

Nordic Swan (considers differences in energy intensity of pulping processes):

- 1,000 kg CO2 /tonne paper for paper made from 100 % DIP/recycled pulp
- 900 kg CO2 /tonne paper for paper made from 100 % chemical pulp
- 1,600 kg CO2 /tonne paper for paper made from 100 % mechanical pulp
- 1100 kg CO2/tonne tissue paper.

For paper comprising of a mixture of cellulose pulp , a weighted limit value is calculated, based on the proportion of each pulp type.

The comparison between Nordic Swan and current EU Ecolabel requirements for CO2 emission

	Ecolabel		Nordic Swan	
	NP, CGP	TP	CGP	TP
Pulp type	*weighted average (kg CO2 / ADt)*			
Non-integrated mills, all pulps purchased	1100	1500		
a) recycled fibre			1000	1100
b) cellulose, chemical pulp			900	1100
c) mechanical pulp			1600	1100
Other mills	1000	1500		
a) recycled fibre			1000	1100
b) cellulose, chemical pulp			900	1100
c) mechanical pulp			1600	1100

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CO_2 – Proposal (1)

Proposal based on EU ETS benchmark values:

The on-site emissions of carbon dioxide from non-renewable sources shall not exceed the EU ETS benchmark standards per tonne of paper produced.

Carbon dioxide emissions related to off-site energy supply (heat, power) shall be consistent with reference values for energy consumption (see next criterion), assuming:

a)An emission factor of 60 kg CO2/GJ for steam (reference: gas fired boiler);
b)An emission factor of 95 kg CO2/GJ for power (reference: gas fired combined cycle power plant)

The provided information would be in line with or will consist of the information provided to the emission authorities under the EU ETS Framework.

CO_2 – Proposal (2)

The emissions of carbon dioxide from non-renewable sources shall not exceed xxx kg per tonne of paper produced, including emissions from the production of electricity (whether on-site or off-site).

For non-integrated mills (where all pulps used are purchased market pulps) the emissions shall not exceed xxx kg per tonne. The emissions shall be calculated as the sum of the emissions from the pulp and paper production.

Assessment and Verification:

the applicant shall provide detailed calculations showing compliance with this criterion, together with related supporting documentation.
The applicant shall provide data on the air emissions of carbon dioxide. This shall include all sources of non-renewable fuels during the production of pulp and paper, including the emissions from the production of electricity (whether on-site or off-site).

The following emission factors shall be used in the calculation of the CO2 emissions from fuels:

Fuel	$CO_{2\,fossil}$ emission	Unit
Coal	96	g $CO_{2\,fossil}$/MJ
Crude oil	73	g $CO_{2\,fossil}$/MJ
Fuel oil 1	74	g $CO_{2\,fossil}$/MJ
Fuel oil 2-5	81	g $CO_{2\,fossil}$/MJ
LPG	66	g $CO_{2\,fossil}$/MJ
Natural Gas	56	g $CO_{2\,fossil}$/MJ
Grid Electricity	380	g $CO_{2\,fossil}$/kWh

The period for the calculations or mass balances shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 45 subsequent days of stable running of the plant. The calculations shall be representative of the respective campaign.

For grid electricity, the value quoted in the table above (the European average) shall be used unless the applicant presents documentation establishing the average value for their suppliers of electricity (contracting supplier or national average), in which case the applicant may use this value instead of the value quoted in the table.

The amount of energy from renewable sources purchased and used for the production processes will not be considered in the calculation of the CO2 emissions. Appropriate documentation that this kind of energy is actually used at the mill or is externally purchased shall be provided by the applicant.

Questions

Q. Considering legal requirements (EU ETS), should emission requirement for CO2 be maintain under the EU Ecolabel criteria.

Q. Should the criterion be changed referring to the EU ETS benchmark?

Q. Should the EU Members States that rely on carbon intensive fuel (grid) be given more flexible approach?

Q. In case, the criterion is preferred to be kept in the current form, shall the reference value remain unchanged?

Q. Should the same criterion apply to all product groups?

Criterion 3. Fibre sourcing

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Fibre sourcing -1

	Newsprints 2012/448/EU	Copying and Graphic papers (2011/332/EU)	Tissue paper
Fibre sourcing	• At least the 70 % (w/w) of recovered fibres. • The proportion of uncertified material shall not exceed 50 %.	• The proportion of uncertified virgin fibre shall not exceed 50 %.	• The proportion of uncertified virgin fibre shall not exceed 50 %.

Key aspects:

1. *Lot of opposition for minimum recycled fibre content;*
2. *Push for higher sustainable % for virgin fibre fractions*
3. *Push for a more uniform yet flexible approach*
4. *Concerns raised about verification and "accounting" of fibres*
5. *Pressure to directly embed SFM principles in criteria.*

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Fibre sourcing -2

Recycled content has obvious environmental benefits but opposition to mandatory minimum recycled contents in EU Ecolabel have been raised because,

- *Is it better to transport recovered paper 1000 km when SFM certified forests are located within 100 km of mill?*
- *High paper production in Nordic countries but low volume of locally recovered paper due to low population.*
- *Not all recovered paper grades suitable for CGP, NP and TP. Packaging is the dominant destination for recovered paper.*
- *Consumption of CGP and NP is decreasing in Europe.*
- *Improved recovery rates of paper in Europe means:*
  - *that fibre life cycles are increasing (3.5 vs 2.4)*
  - *fibre quality is decreasing…*
- *See current market situation……*

Fibre sourcing -3

Recycled paper - constraints

It is estimated that the demand for recycled paper will exceed supply by 1.5 million tonnes (1.65 tons) of recycled pulp per year by 2018….

Source: CEPI

	Recovered Paper Grades							
Paper Sector	A Mixed Grades	B Corrugated and Kraft	C Newspapers & Magazines	D High Grades	E Total Use of Recovered Paper	F Usage by Sector * %	G Total Paper Production	E:G Utilisation Rate ** %
'000 Tonnes								
Newsprint	25	0	7 163	55	7 244	15,2	7 594	95,4
Other Graphic Papers	154	18	2 766	706	3 643	7,7	29 328	12,4
Total Graphic	179	18	9 929	761	10 887	22,9	36 922	29,5
Case Materials	4 829	16 309	265	835	24 480	51,5	26 204	93,4
Carton Boards	1 725	533	157	855	3 270	6,9	8 546	38,3
Wrappings, Other Pack.	1 858	1 932	150	473	4 413	9,3	8 501	51,9
Total Packaging Papers	8 412	21 017	572	2 163	32 163	67,6	43 251	74,4
Household & Sanitary	298	103	582	1 916	2 899	6,1	7 001	41,4
Others	255	1 049	126	166	1 597	3,4	3 892	41,0
Total	9 144	22 187	11 208	5 006	47 546	100,0	91 067	52,2
Share of Total	19,2%	46,7%	23,6%	10,5%	100,0%			

*Usage by sector: total use of recovered paper in a sector as % of the total recovered paper used by the industry
** Utilisation rate: use of recovered paper in a sector as % of total paper production in that sector

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Fibre sourcing -4

Push for a higher % of virgin fibres that are SFM.

- *Should take inspiration from recently voted EU Ecolabel product groups (i.e. Footwear and Furniture).*
- *A minimum 70% requirement for "sustainable fibres".*
- *Considered as SFM virgin fibres and/or recovered fibres.*
- *No distinction to be made between pre- and post-consumer fibres.*
- *Mirrors current FSC and PEFC requirements.*
- *Affords the flexibility to use SFM virgin material or recovered fibres as best suits local conditions.*

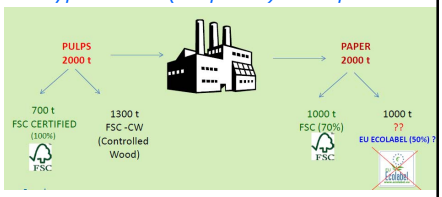
Fibre sourcing -5

Concerns about verification and fibre accounting.

Hypothetical (simplified) example

Assumes existing requirement of 50% SFM virgin fibre in EU Ecolabel paper.

FSC output is dealt with by FSC auditor, EU Ecolabel output is dealt with by CB.



- *FSC auditor will require proof that enough certified fibres are allocated to products carrying their label.*
- *But CB needs to see similar proof to ensure no double-counting, needs to see ALL outputs, not only inputs and EU Ecolabel outputs.*

PEFC-account — Fine Paper Ltd

Purchased 100% claim PEFC fibers (figures from the invoices)

fiber raw material	supplier	unit	jan-13	feb-13	mar-13	apr-13	maj-13	jun-13	jul-13	aug-13	sep-13	okt-13	nov-13	dec-13	feb-14	12 months
Wood1	WFC1 forest products	m³	0	0	10 417	10 417	10 417	10 417	0	0	0	0	0	0	0	41 666
Pulp1	Finepulp Ltd	m³	593	1 257	992	2 055	1 632	1 218	735	174	955	2 387	1 140	76	24	12 645
Produced paper	Conversion factor															
Amount paper from wood1	2	m³	0	0	2	5 208	5 208	5 208	0	0	0	0	0	0	0	15 626
Amount paper from Pulp1	1	m³	593	1 257	992	2 055	1 632	1 218	735	174	955	2 387	1 140	76	24	12 645
Total		m³	593	1 257	994	7 263	6 840	6 426	735	174	955	2 387	1 140	76	24	28 271
Account withdrawals:																
Delivery of PEFC labelled products		m³	84	49	103	176	148	164	413	50	640	538	787	46	15	3 129
Delivery of Swan labelled products		m³	60	40	100	100	40	50	400	100	610	500	700	56	18	2 714
Withdrawl PEFC-paper			84	49	103	176	148	164	413	50	640	538	787	46	15	
Withdrawl Swan labelled-paper		0,5	30	20	50	50	20	25	200	50	305	250	350	28	9	
Withdrawl older>12 m			0	0	0	0	0	0	0	0	0	0	0	0	0	
Balance PEFC account		m³	479	1 188	841	7 037	6 672	6 237	122	74	10	1 599	3	2	0	23 785

Fibre sourcing -6

Questions

Q. Market data shows a current average 95% recovered fibre content for Newsprint Paper, is this sufficient evidence to justify maintaining (or even increasing) the current criterion requiring a minimum recycled content of 70%?

Q. Market data shows much lower average % recovered fibre contents for CGP (12%) and TP (41%). Is this sufficient evidence to support a flexible approach where at least 70% of fibres should be from recovered paper or SFM certified virgin fibre or a combination thereof?

Q. Any opinions from practical experience about the level of information needed to clearly demonstrate the accounting for certified fibres in and out of a production facility?

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Fibre sourcing -7

Push for directly stating SFM principles

- *Lack of clarity over what is required as "or equivalent" to FSC and PEFC considering the only partial recognition that these schemes afford to each other.*
- *Directly stating SFM principles and criteria is not so difficult, but doing it in a way that is concise, tangible and verifiable outside of FSC and PEFC is not so easy.*
- *Minimum requirements for any principles to be included:*
  - *Respect the Forest Europe indicators*
  - *Respect current FSC and PEFC principles*
  - *Be as tangible, quantifiable & verifiable as possible*

Fibre sourcing -8

Forest Europe	FSC	PEFC
Forest area, growing stock, age structure, diameter distribution, forest carbon.	Compliance with laws	Maintenance and appropriate enhancement of forest resources and their contribution to the global carbon cycle
	Workers' rights and employment conditions	
Air pollutant deposition and concentration, soil condition, defoliation, forest damage, forest land degradation	Indigenous people's rights	Maintenance of forest ecosystem health and vitality
	Community relations	
	Benefits from the forest	Maintenance and encouragement of productive functions of forests
Increment and fellings, roundwood, non-wood goods, services	Environmental values and impacts	Maintenance, conservation and appropriate enhancement of biodiversity in forest ecosystems
Diversity of tree species, regeneration, naturalness, introduced tree species, deadwood, genetic resources, forest fragmentation, threatened forest species, protected forests, common forest bird species	Management planning	Maintenance and appropriate enhancement of protective functions in forest management
	Monitoring and assessment	
	High conservation values	Maintenance of other socio-economic functions and conditions
Protective forests	Implementation of management activities	Compliance with legal requirements
Forest holdings, contribution to GDP, Net revenue, investments, forest sector workforce, OHS, wood consumption, trade in wood, wood energy, recreation		

Questions

Q. What are the most important SFM criteria, how credible are they and how easily can they be verified?

Q. What are the pros and cons of using existing SFM certification schemes as proof of compliance with SFM criteria established under the EU Ecolabel?

Q. Besides SFM certificates, what other forms of assessment and verification could be considered as proof of compliance that fibres are sustainably sourced?

Use phase

	Newsprints 2012/448/EU	Copying and Graphic papers (2011/332/EU)	Tissue paper
Fitness for use	The product shall be suitable for its purpose/use		
Consumer information	Appearing on Box 2 of the ecolabel product		

Key aspects:

✓ ***To investigate the relevance of fitness for use, its formulation and verifiability.***

Fitness for use (C&G)

Criterion 6. The product shall be suitable for its purpose.

Assessment and verification: the applicant shall provide appropriate documentation demonstrating compliance with the scope of the criteria. The test methods shall comply with one of the following standards:
— copying papers: EN 12281 — 'Printing and business paper — Requirements for copy paper for dry toner imaging processes',
— continuous papers: EN 12858 — 'Paper — Printing and business paper — Requirements for continuous stationery'.

The product shall fulfil requirements for permanence in accordance to applicable standards. The user manual will provide the list of norms and standards which shall be used for the permanence assessment.

As alternative to the use of the above methods, the producers shall guarantee the fitness for use of their products providing appropriate documentation demonstrating the paper quality, in accordance with the standard EN ISO/IEC 17050-1:2004, which provides general criteria for suppliers' declaration of conformity with normative documents.

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Fitness for use (NS)

Criterion 6 — Fitness for use

The product shall be suitable for its purpose.

Assessment and verification: the applicant shall provide appropriate documentation demonstrating compliance with the scope of the criteria. The product shall fulfil the requirements for permanence in accordance with applicable standards. The user manual will provide the list of norms and standards which shall be used for the permanence assessment.

As alternative to the use of the above methods, the producers shall guarantee the fitness for use of their products providing appropriate documentation demonstrating the paper quality, in accordance with the standard EN ISO/IEC 17050-1:2004, which provides general criteria for suppliers' declaration of conformity with normative documents.

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Fitness for use (TS)

Criterion 7. Fitness for use
The product shall be fit for use

Proposal:

(Already included in existing criteria but under a different criterion: Product Safety)
All tissue products shall fulfil the following requirements:
Slimicides and antimicrobic substances: No growth retardance of micro-organisms according to test method EN 1104
Dyes and optical brighteners: No bleeding according to test method EN 646/648 (level 4 is required).

Assessment and verification: The applicant shall provide a declaration of compliance with these requirements, supported by relevant test reports in accordance with standards EN 1104 and EN 646/648.

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Consumer information (C&G))

Criterion 7 — Information on the packaging

The following information shall appear on the product packaging:
'Please collect used paper for recycling'.
In addition, if recycled fibres are used, the manufacturer shall provide a statement indicating the minimum percentage of recycled fibres next to the EU Ecolabel logo.

Assessment and verification: the applicant shall provide a sample of the product packaging bearing the information required.

Criterion 8 — Information appearing on the EU Ecolabel

The optional label with text box shall contain the following text:
'— low air and water pollution,
— use of certified fibres AND/OR use of recycled fibres (case-by-case),
— hazardous substances restricted'.
The guidelines for the use of the optional label with the text box can be found in the Guidelines for use of the Ecolabel logo on the website:
http://ec.europa.eu/environment/ecolabel/promo/pdf/logo%20guidelines.pdf

Assessment and verification: the applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.

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Consumer information (NS)

Criterion 7 — Information appearing on the EU Ecolabel

The optional label with text box shall contain the following text:
'— low air and water pollution
— use of certified fibres AND/OR use of recovered fibres [case-by-case]
— hazardous substances restricted'
The guidelines for the use of the optional label with the text box can be found in the 'Guidelines for the use of the EU Ecolabel logo' on the website:
http://ec.europa.eu/environment/ecolabel/promo/pdf/logo%20guidelines.pdf

Assessment and verification: the applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.EN 28.7.2012 Official Journal of the European Union L 202/37

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Criterion 8. (TS)

Information on the packaging

Box 2 of the Eco-label shall include the following text:

— uses sustainable fibre,
— low water and air pollution,
— low greenhouse gas emissions and electricity use.
In addition, next to the Eco-label, the manufacturer shall either provide a statement indicating the minimum percentage of
recycled fibres, and/or a statement indicating the percentage of certified fibres.

Q: Should we change the information on the packaging?

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Consumer information

Proposal:

Information on the packaging

The following information shall appear on the product packaging:
'Please minimise use of this paper where possible (e.g. through avoidance and double sided printing), reusing used paper where possible (e.g. as note paper), and finally presenting it for recycling. Remember that minimising contamination (e.g. adhesives, labels, tape, laminates etc.) helps to maximise the environmental benefits of recycling'.

Assessment and verification: the applicant shall provide a sample of the product packaging bearing the information required.

The consumers is encouraged to follow the waste hierarchy and to maximise the benefits of paper recycling.

Question: Do the revisions/additions seem reasonable?

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New proposed criteria areas:

Three new proposals:

i. Water consumption control
ii. EDTA / DTPA restrictions
iii. Optical Brightening Agents (OBAs)

Following slides will:

- Present proposed criteria (where relevant)
- Present supporting rational
- Present questions to encourage discussion

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Water consumption - 1

(a) Onsite water consumption control

This requirement shall apply to all relevant pulp and paper mills that are *under the management of the applicant*. A report explaining how water consumption is monitored in the mill shall be provided which should also address the following points:

- Highlighting existing design features that minimise water consumption;
- Potential future improvements that could be made to reduce water consumption;
- The practical limitations of further closure of water circuits at the mill site(s); and
- Continuous improvement objectives and targets.

Assessment and verification: the applicant shall provide a detailed water minimisation and management plan for of each of the sites concerned and a declaration of compliance with the criterion. Where appropriate, EMS (e.g. *ISO14001 or EMAS*) procedures or permit information (e.g. under Directive 2015/75/EU on industrial emissions – formerly Integrated Pollution Prevention and Control) can be used as part of the evidence.

(b) Reporting of specific water consumption

The specific water consumption associated with the paper product shall be reported in m3/ADT. Data shall be obtained from metering of inflows of process water (i.e. from mains water or abstraction from rivers, lakes or boreholes) and the production output of pulp of paper from the mill. Annual average data should be reported based on measurements taken at least once per month.

For each pulp 'i' used, the related measured water consumption ($WC_{pulp,i}$ expressed as m3/ADT), shall be weighted according to the proportion of each pulp used per ADT of paper produced. The weighted WC for the pulps is then added to the measured WC from the paper production to give a total WC, WC_{total}.

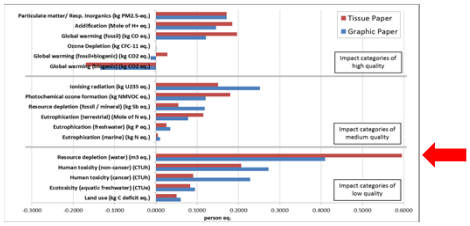
$$P_{WC} = \sum_{pulp,i=1}^{i} [pulp,i^{ri}\,(WC_{pulp,i})] + WC_{papermachine}$$

Assessment and verification: the applicant shall provide a report declaring the specific water consumption associated with the production of the paper product, expressed as m3/ADT paper, together with the underlying calculation. For non-integrated paper production, declarations of specific water consumption shall be provided by the pulp supplier for use in the calculation.

Water consumption - 2

Why is water consumption important?

→ It is the biggest normalised LCA impact



Source: PEFCR Screening Study for representative European paper products

Water consumption - 3

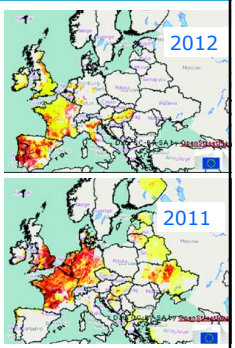
Importance varies with:

- Regional context
- Temporal context
- Long term climate change…?

Better to be prepared!

CDI (Combined Drought Indicator)

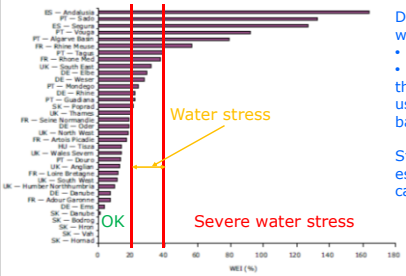
Watch, level 1
level 2
level 3
Warning, level 1
level 2
level 3
Alert, level 1
level 2
level 3
level 4



Water consumption - 4

Another potential indicator is WEI:

→ WEI = Water Explotation Index



Defined as the % of water in a

- water catchment or
- country

that is abstracted for use on an annual basis.

Still not fully established at catchment level.

Water consumption - 5

Pros and cons of reducing water consumption

Pros	Cons
Reduced abstraction costs	Corrosion risk in ECF plants
Less stress on local water catchment	Need to monitor and manage NPEs
Public perception	Investment costs
Improved possibilities for fibre recovery	May be more difficult with certain processes
Reduced effluent quantity	Poorer effluent quality

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Water consumption - 6

Examples of simple improvements:

Sector	BAT-associated waste water flow
Bleached kraft pulp	**25 – 50 m3/ADt**
Unbleached kraft pulp	15 – 40 m3/ADt
Bleached sulphite paper grade pulp	25 – 50 m3/ADt
Magnefite pulp	45 – 70 m3/ADt
Dissolving pulp	40 – 60 m3/ADt
NSSC pulp	11 – 20 m3/ADt
Mechanical	9 – 16 m3/ADt
CTMP and CMP	9 – 16 m3/ADt
RCF paper mills without deinking	1.5 – 10 m3/t (the higher end of the range is associated with mainly folding boxboard production)
RCF paper mills with deinking	8 – 15 m3/t
RCF-based tissue paper mills with deinking	10 – 25 m3/t
Non-integrated paper mills	3.5 – 20 m3/t

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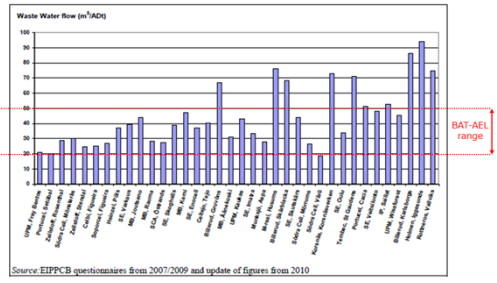
Water consumption - 7

Best practice for kraft pulp (evidence from BREF):



Source: EIPPCB questionnaires from 2007/2009 and update of figures from 2010

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Water consumption - 8

Rationale:

- Propose to require monitoring and good management practice.
- Fits well with EMAS and ISO 14001 approach
- May be useful for future BREF exercises
- Only require applicants to optimise what they can control (i.e. not cover market pulp from 3rd parties).
- Is an important issue, even more so in some regions
- Paper industry already has front-runners in EU.
- Quick wins possible and encouraged
- Major improvement possible but not required

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Water consumption
Questions

Q. Is it more appropriate to target the minimisation of water consumption or the minimisation of wastewater discharge volume? Please explain why either way?

Q. Do you think a benchmark could or should be set for water consumption (or wastewater effluent discharge)?

Q. Would market pulp suppliers be willing or able to provide specific water consumption data from their pulp?

Q. Should a tiered approach be taken, which would introduce actual limits for mills located in geographical regions of higher water scarcity/water stress? If so, what system should be used to define levels of water scarcity/water stress?

EDTA / DTPA - 1

- An important chelating agent (esp. in TCF) → very relevant to Nordic countries
- Widely used in other applications (detergents, cosmetics etc. Paper is ca. 12% of EU market)
- EDTA has poor biodegradability
- Can pass to environment in WWTP effluents
- Possible further consequences (i.e. mobilisation of heavy metals in waters)
- Can reduce EDTA emissions by having suitable WWTP in place (i.e. alkaline activated sludge)

EDTA / DTPA - 2

Nordic approach:

- Basic module requirement (version 2.2)
- Report on quantities of EDTA used
- If > 1.0kg/t 90% dry pulp then,
  - Submit an EDTA use reduction plan
  - Consider alternatives

Blue Angel approach:

- EDTA and DTPA are explicitly banned.

EDTA / DTPA - 3

Discussion points:

Q: Should chelating/complexing agents be restricted like surfactants on the basis of their biodegradability?

Q: What chemicals are used by Nordic Swan and Blue Angel licence holders as alternatives to EDTA/DTPA?

Q: If so, are there any issues with these alternatives such as poorer performance, higher quantities needed, cost, and market availability?

Q: Is there any existing information concerning the overall environmental profile of these alternative chemicals?

Q: If EDTA / DTPA were to be permitted, what conditions should be applied? For example, certain wastewater treatment processes, effluent testing (using which method)?

OBA - 1

- To improve brightness
- Can result in savings on bleaching chemicals
- Can be more cost-effective than extra bleaching for a given brightness
- Some may possess hazards that could be restricted under 4a) if they do not change properties during processing and are >0.1% of paper weight.

Blue Angel: Bans OBAs outright except for certain grades where a list of certain OBAs are approved for use.

Green Seal: Added OBAs should not exceed 0.02% w/w.

OBAs - 2

Discussion points

Q. Should some OBAs be restricted under the EU Ecolabel where they carry certain risk phrases (e.g. around PBT and vPvB)?

Or should they simply be addressed like most other chemicals under criterion 4a)?

Q. If to have a specific restriction, should restrictions be conditional depending on the grade of paper product?

Timing next steps.

1. Stakeholders can provide comments on separate draft criteria proposals for EU Ecolabel before 1tst July;
2. Comments need to be transmitted in BATIS;
3. Derogation request (1st August) – possible extension;
4. Sub-groups call for interest- July 2016;
6. December 2016– February 2017 2nd AHWG (supported by criteria).

Thank you for your attention

Follow-up contacts

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