Development of European Ecolabel Criteria for Electronic Displays

AHWG2

1.Welcome and introduction

Introduction to the political objectives of the EU Ecolabel and of Green Public Procurement.

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

•IRMM – Geel, Belgium
• *Institute for Reference Materials and Measurements*

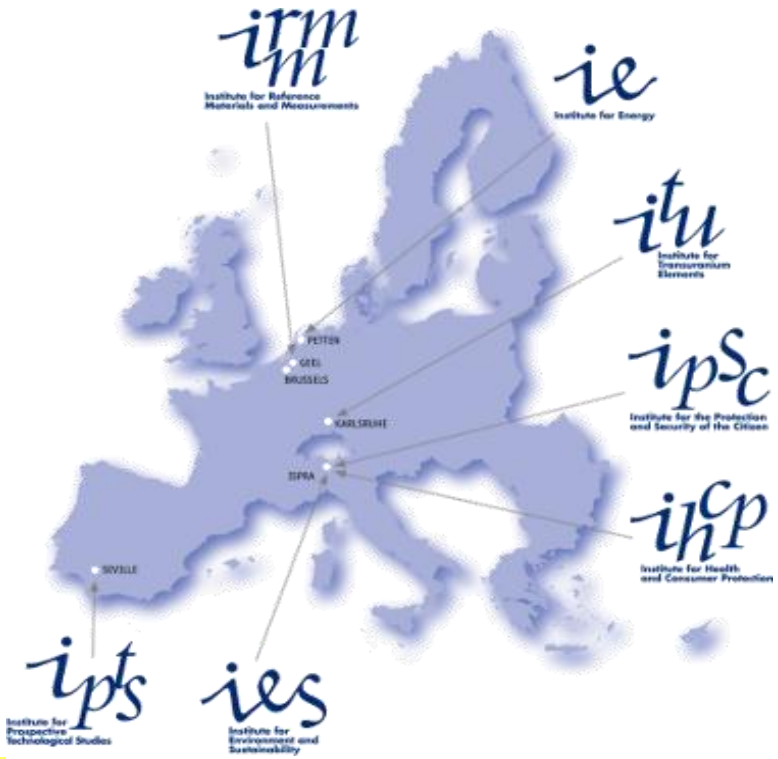
•ITU – Karlsruhe, Germany
Institute for Transuranium Elements

IES/ IHCP/ IPSC – Ispra, Italy
Institute for Environment and Sustainability

· *Institute for Health and Consumer Protection*

Institute for the Protection and Security of the Citizen

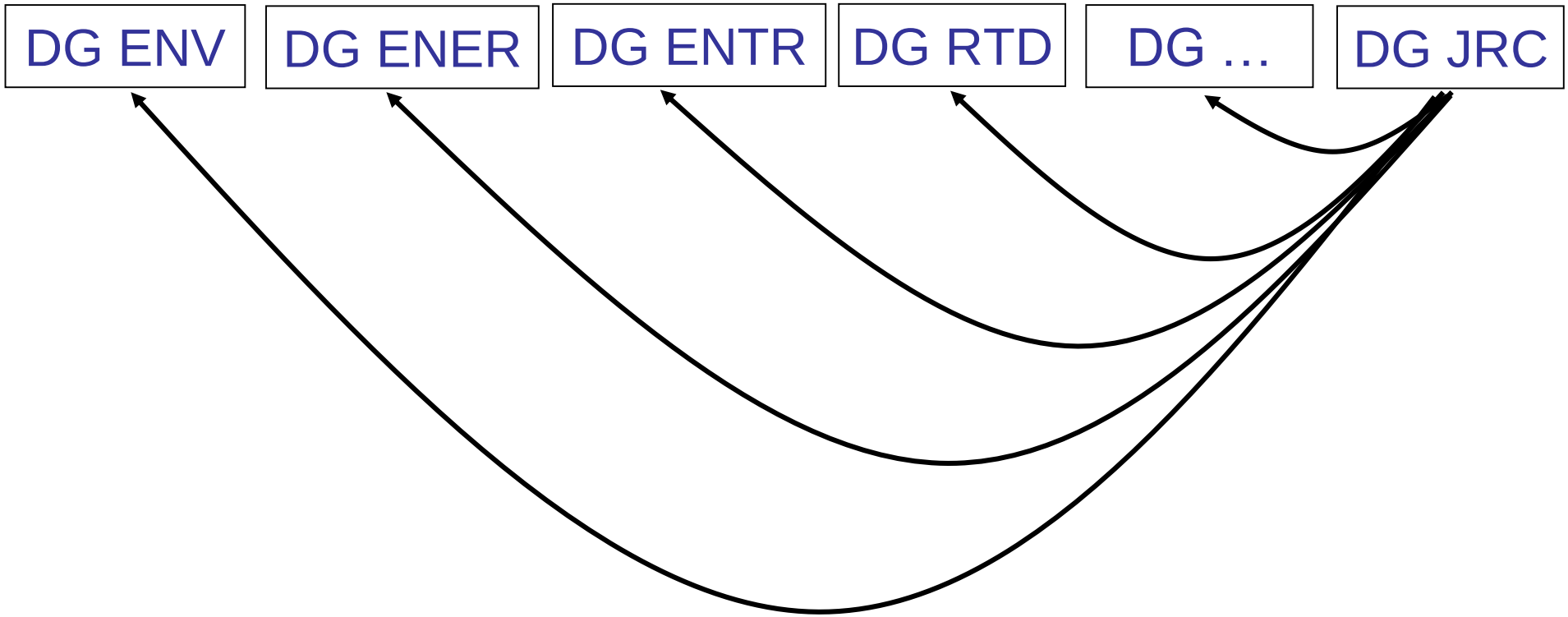
•IPTS – Sevilla, Spain
• *Institute for Prospective Technological Studies*



Research Centre

European Commission

Joint Research Centre in the context of the European Commission:



Joint Research Centre

European Commission

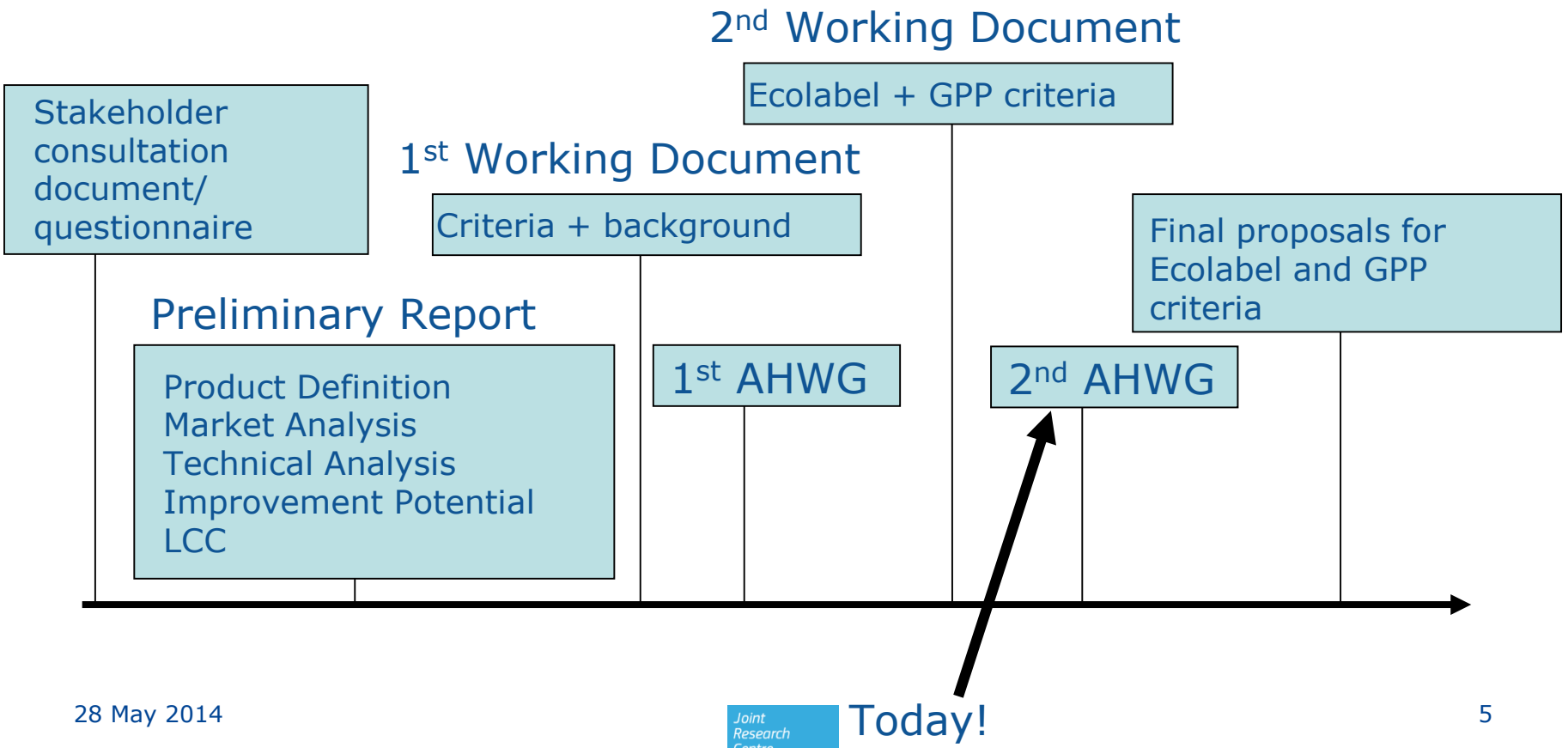
Activities in support of Product Policy

*IPTS supports the **development and implementation of Sustainable Product Policies**, among them the EU Ecolabel Regulation and the Green Public Procurement Communication.*

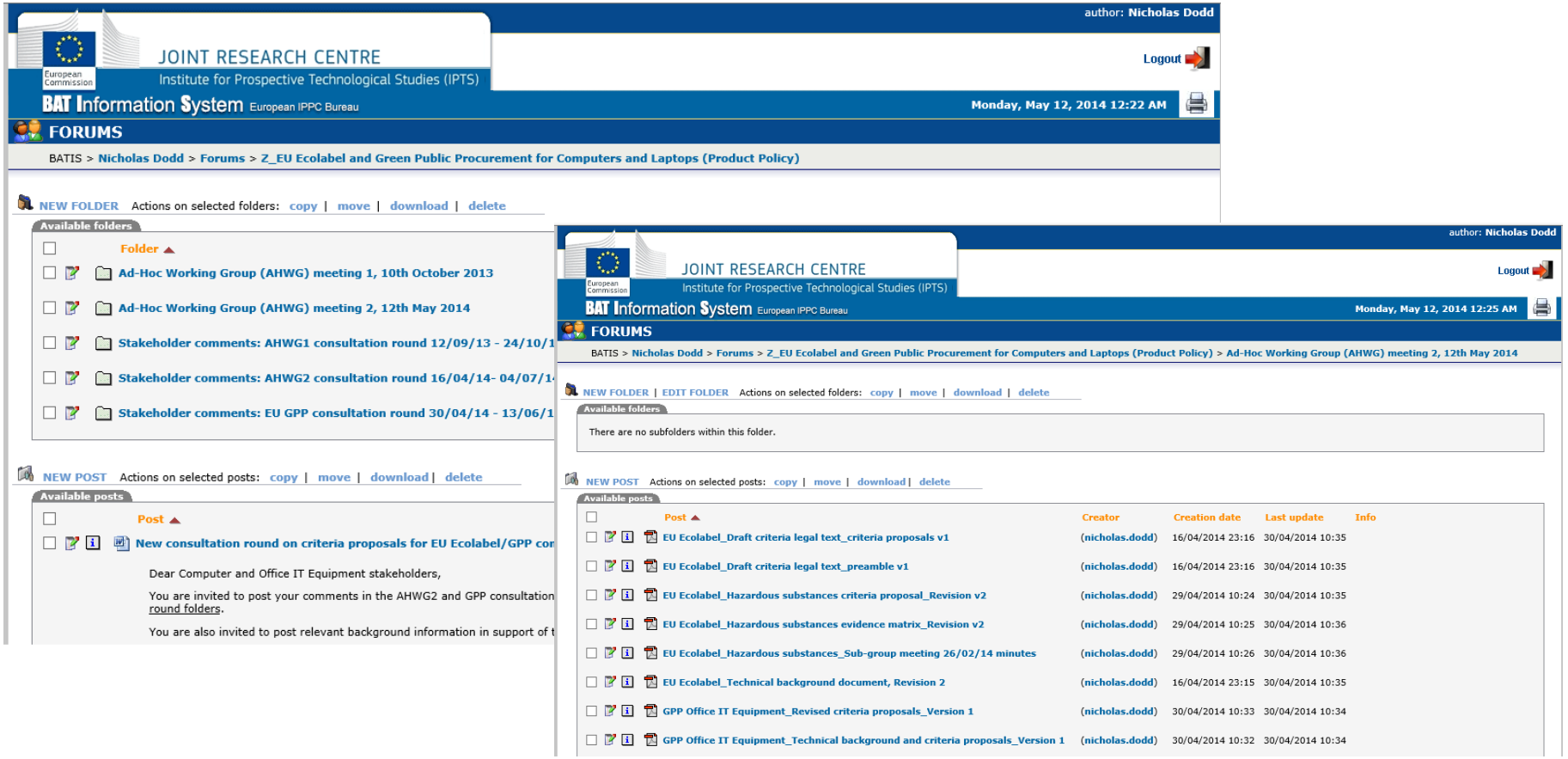
***Analysis of product groups** with focus on techno-economic and environmental aspects*

***Develop criteria** and implementing measures until the stage of voting in committee (resp. publication on GPP page)*

Criteria development process



Using the BATIS system



European Commission

Ecolabel and GPP Criteria Development for electronic displays

1. Stakeholders can provide comments on separate draft criteria proposals for EU Ecolabel (before 4th July) and Green Public Procurement (before 13th June).
2. Comments need to be transmitted in BATIS
3. Derogation request (before 13th June)
4. Hazardous substances Subgroup meeting ~ 25th June
5. June 2014: EUEB progress report
6. November 2014 final draft criteria available
7. Process finalised 1st half 2015

European Commission

2. Introduction and background

Work program and timeline, summary of scope and preliminary evidence base.

preliminary report- Task1:Scope and definition

Create a unified criteria set for televisions and computer monitors

Including computer monitors with integrated television tuner within the scope of televisions.
Two main justifications seen for this:

1. **Energy Star (EU) excludes those products from the scope of computer displays, but covers them under televisions (US);**
   Revision process of the Ecodesign goes in the same direction

2. **Computer displays with TV capabilities have additional energy-relevant components compared to computer displays without TV tuner (built-in tuner, speakers, sound cards, as well as integrated functions like HDD and DVD/Blu-ray disks) which make them more comparable to televisions.**

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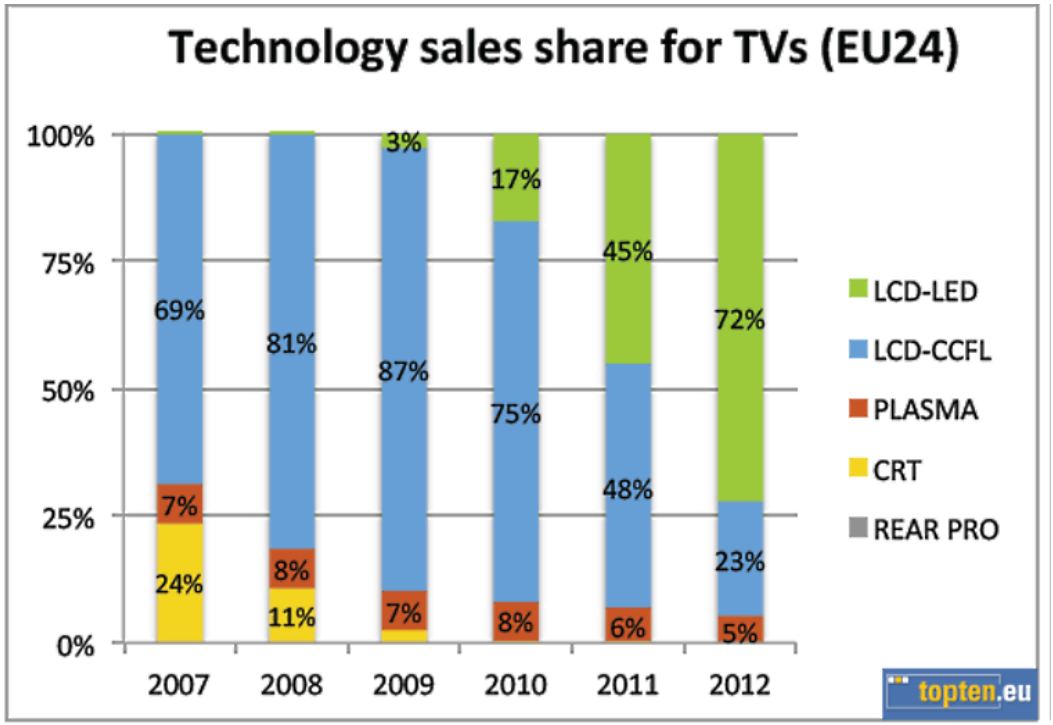
preliminary report- Task2: Market analysis

- **LCD dominant** flat panel TV technology.
- No rear projection and CRT any more; Plasma expected to decline towards zero.
- LCD with **LED backlight 72%;**
- CCFL backlight expected to be nearly eliminated within the next few years.
- **Computer displays**: **nearly 100% LCD** monitors **with LED backlight** technology



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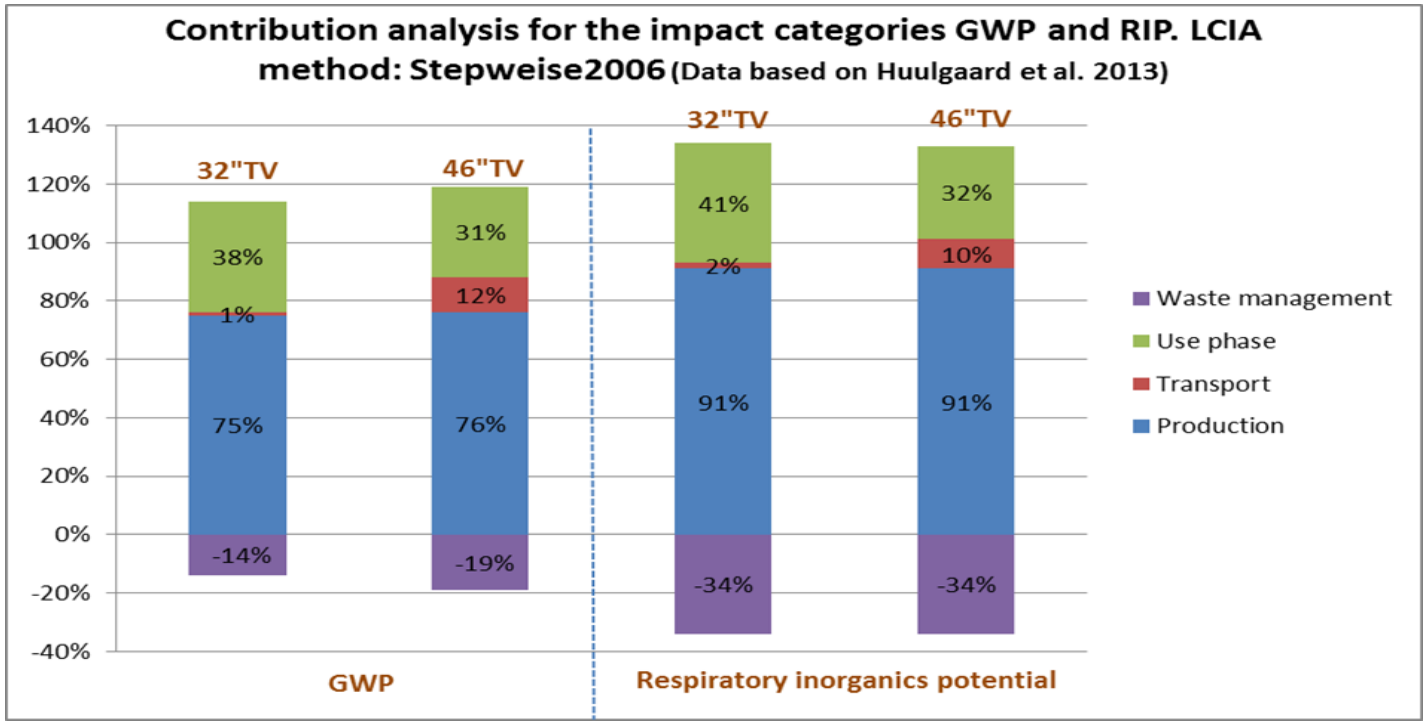
preliminary report- Task3: Technical analysis



Manufacturing and use phase dominate the environmental impacts

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preliminary report- Task4: Improvement potential

Main areas of focus for the EU Ecolabel revision

Hot spots	Areas of improvement / ecolabel criteria	
Production phase / End-of-life phase		
Motherboard	• Design for disassembly and recycling	**Lifetime extension** • Upgradeability • Repairability • Service (availability of spare parts) • Second-hand usage • User instructions
Display	• Hazardous substances • F-gases during production • Design for disassembly and recycling	
Chassis	• Recycled content • Hazardous substances • Design for disassembly and recycling • Material recovery	
Use-phase		
	Energy requirements • Energy efficiency; power cap • Power management • User instructions	

3. Scope and definition of product group

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised Ecolabel proposal.

First proposal
The product group 'electronic displays' shall comprise: television sets, television monitors, dual-function TV/monitors and external computer displays that can be connected to the mains power source either directly or via an external power supply. Internal computer displays, tablet PCs, smart phones, gaming consoles, digital photo frames, projectors, signage products and displays intended for and only available to medical and professional markets and providing specified features required by those markets shall not be considered as 'electronic displays' for the purpose of this Decision.

- Discussion paper on the review of the Ecodesign and Energy Labelling Regulations for televisions and on the draft Regulation on electronic displays, including computer monitors

Stakeholder feedback on product scope and definition

- According to written stakeholder feedback following the AHWG meeting, the proposed broadening of the scope to external computer displays is welcomed

- Harmonized approach to EU Commission Regulation on Ecodesign requirements for electronic displays.

Further evidence and research

The draft Commission Regulation with regard to ecodesign requirements for electronic displays (not published yet) provides the following definitions:

'Electronic display' *means an electronic product with a display screen and associated electronics, that is primarily intended for use in a household and/or in an office, that as its primary function displays visual information and that is connected to a mains power source for its intended continuous use, either directly or via an external power supply;*

Electronic displays include, but are not limited to, the following products:

(a) ***'Television'*** *means an electronic display that is manufactured with a television tuner, and that is capable of displaying dynamic visual information from wired or wireless sources including but not limited to:*

(i) broadcast and similar services for terrestrial, cable, satellite, and/or broadband transmission of analogue and/or digital signals;

(ii) display-specific connections, such as VGA, DVI, HDMI, DisplayPort;

(iii) media storage devices such as a USB flash drive, a memory card, or a DVD/BRD; or

(iv) network connections, usually using Internet Protocol, typically carried over Ethernet or WiFi.

(b) ***'Computer monitor'*** *means an electronic display that displays a computer's user interface and open programs, allowing the end-user to interact with the computer, typically using a keyboard and mouse;*

(...)

It is proposed to align the scope of the EU Ecolabel further to the product groups and their proposed definitions of the draft EU Commission Regulation on ecodesign requirements for electronic displays.

Proposed scope (second proposal)
The product group 'electronic displays' shall comprise: televisions and computer monitors that are connected to a mains power source for its intended continuous use, either directly or via an external power supply. Internal computer displays (i.e. displays in notebook computers; displays in integrated desktop computers; mobile computing and communication devices); displays in game consoles, digital photo frames, projectors, all-in-one video conference systems as well as public displays (also known as commercial signage displays), medical monitors, high performance displays, broadcast monitors, security monitors, and status displays shall not be considered as 'electronic displays' for the purpose of this Decision.

Questions to discuss or to comment in written form

1. Feedback by manufacturers on possible loopholes in proposed definitions.

4. Cluster 1: Energy consumption criteria area – presentation and discussion

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised Ecolabel criteria proposals, first GPP proposals.

4.a. Cluster 1: Energy consumption criteria area – presentation and discussion

EU Ecolabel

1. Criterion 1.1 – Energy savings
2. Criterion 1.2 – Power management

Criterion 1.1 – Energy savings

Proposed revised criteria (first proposal)

Energy Efficiency

The electronic display's energy efficiency performance in active mode shall meet the following energy efficiency requirements set out in Regulation [1062/2010/EU]:

(a)Televisions:

(i) Energy efficiency class A for appliances with a visible screen diagonal of up to and including 70 cm (or 27.5 inches);

(ii) Energy efficiency class A+ for appliances with a visible screen diagonal of 70 cm (or 27.5 inches) to 119 cm (or 47 inches);

(iii) Energy efficiency class A++ for appliances with a visible screen diagonal of equal or more than 120 cm (or 47.5 inches).

(b)External computer displays: Energy efficiency class # (to be discussed)

Standby

(i) The power consumption of the electronic display in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 0.5 W.

(ii) The power consumption of an electronic display in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display, shall not exceed 1 W.

Passive Standby

(i) The power consumption of an electronic display in any off-mode condition shall not exceed 0.3 W, unless the condition in part ii is fulfilled

(ii) For electronic displays with an easily visible switch, which puts the electronic display in a condition with power consumption not exceeding 0.01 W when operated to the off position, the power consumption of any other off-mode condition of the electronic display shall not exceed 0.50 W.

(…)

Proposed revised criteria (first proposal)
Energy Efficiency **(…)** **Networked Standby** (i)If a networked electronic display has the ability to connect to a wireless network, it shall offer the possibility for the user to deactivate the wireless network connection(s). This requirement does not apply to products which rely on a single wireless network connection for intended use and have no wired network connection. (ii)A networked electronic display that has one or more standby modes shall comply with the requirements for these standby mode(s) when all network ports are disconnected or, for wireless network ports, the network ports are deactivated. (iii)Power consumption in a condition providing networked standby: -The power consumption of electronic display with HiNA functionality, in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 8 W. -The power consumption of electronic display without HiNA functionality in a condition of networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 3 W. **Maximum energy consumption** *(a)Televisions:* Televisions shall have maximum power in active mode of ≤ 64 W. *(b)External computer displays:* tbd.

Stakeholder feedback

- It is supported in general to follow the **approach for the revised Ecodesign and Energy Labelling Regulations**. EU Ecolabel should be 10-20% below any valid EcoDesign criteria from the beginning.
- Feedback from one of the stakeholders indicates support for a progressive approach.
- Dynamic approach.
- Several stakeholders stressed the urgent need for up-to-date market data allowing aligning currently available data on displays with the possible new proposal defining the energy efficiency. Alternatively: fast revision or flexible criteria that will follow the evolutions within the market.

Emerging technologies

- Divided opinion on consideration of energy clauses for emerging technics (like OELD backlights):
  - not considered as appropriate due to the mostly unclear timelines for acceleration of the efficiency of these technologies.
  - They should be allowed to qualify for the Ecolabel, through the introduction of some specific factor to the calculation.

Strictness of energy savings criteria

- At the present EU Ecolabel televisions with only an energy label class B are on the market which should be avoided.

- Network Standby requirements go beyond the mandatory Eco-design requirements. However the level of ambition is assessed to be too high, by halving the LoNA requirement to 3 Watt (from 6 Watt at ErP).

Power cap

- General energy cap for energy consumption – independent of screen size.
- Power is generally needed for the basic functionalities; so that low power limits could limit features and a power cap could exclude bigger screen sizes.
- Too ambitious by another stakeholder as well having a big impact on larger displays.

Further energy savings criteria

- A visible on/off switch is considered still as an important element by one of the stakeholders.
- CENELEC TC206 TV harmonised standard working group have produced a "White Paper", meeting the latter's requirement for a definition of "an easily Visible" TV off-switch. They qualify the practicality of such a switch in the context of "thin" displays and show that the potential energy saving of a switch is minimal.
- Finally, one of the stakeholders recommends a criterion not allowing any "fast start" mode, as this feature can consume much more than the usual standby.

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Further research / evidence

Power demand in on-mode

Draft of the Ecodesign and Energy Labelling Regulation for electronic displays (not published yet):

Energy Labelling

$$EEI = \frac{Pm}{(4.3224 * A + 20)} \quad \textit{for all screen areas}$$

Where
Pm = power demand (W) in on-mode, *A* = the visible area of the display screen (dm²)

A+++	EEI < 0.05
A++	0.05 ≤ EEI < 0.13
A+	0.13 ≤ EEI < 0.23
A	0.23 ≤ EEI < 0.30
B	0.30 ≤ EEI < 0.42
C	0.42 ≤ EEI < 0.60
D	0.60 ≤ EEI

Ecodesign

$$EEI = \frac{Pm}{(1.10 * A + 9.11) * 2.10} \quad \textit{for screen areas where } A \leq 15.9\ dm^2$$

$$EEI = \frac{Pm}{(42.66 * \ln(A) - 90.68) * 2.10} \quad \textit{for screen areas where } A > 15.9\ dm^2$$

*For comparison: screen diagonal 24 inch = 15.88 dm² screen area; 25" = 17.23 dm²

It is propose to align the EU Ecolabel criteria to the Ecodesign requirements, reflecting less strict requirements for small and medium-sized electronic displays but stricter ones for larger displays. If the EU Ecolabel would be aligned to certain Energy efficiency classes of the Energy Label (e.g. A+ or better), this so called "progressive approach" would not implemented as they are still derived on a linear approach.

The draft version of Commission Regulation with regard to Ecodesign requirements for electronic displays (not published yet) proposes the following tiers for on-mode power demand:

Tier	Timetable (after publication of the Regulation)	EEI
I	12 months	≤ 0.60
II	36 months	≤ 0.40
III	60 months	≤ 0.20

Pass/compliance rate of 775 LED models with the Tier 1 to Tier 3 on-mode power demand requirements laid down in the proposed measure.

%	Tier 1	Tier 2	Tier 3
Max EEI	**≤ 0.60**	**≤ 0.40**	**≤ 0.20**
Small	71.12%	18.41%	0%
Large	81.53%	44.98%	0%
Total	**77.81%**	**35.48%**	**0%**

As the EU Ecolabel claims to cover the **20% best appliances** being on the market it is proposed:

a) align the Ecolabel requirements at least to the EEI values of Ecodesign Tier 2 as the compliance rate of Tier 1 is already quite too high and would become mandatory within the validity period of the EU Ecolabel;

b) to differentiate Ecolabel requirements between small and large displays as the compliance rate of larger displays seems to be higher;

c) to include a dynamic approach for taking into consideration future innovations within the four years period of the EU Ecolabel.

Power demand in standby mode and off mode:
indication about the overall relevance of setting stricter requirements for power demand in standby mode.

Power demand in standby mode [W]	Annual power consumption in standby mode [kWh/year] (PCs: approx. 3 hours per day)	Annual power consumption in standby mode [kWh/year] (TVs: approx. 20 hours per day)
0.1 W	0.11	0.73
0.3 W	0.33	2.19
0.5 W	0.55	3.65
1.0 W	3.37	7.30

Further reducing the Ecolabel requirements from 0.5 W to 0.3 W, for example, would result in total energy savings of around 0.2 to 1.5 kWh per year and device which seems to be negligible.

Against this background, it is proposed not to set down EU Ecolabel criteria on power demand in standby mode and off mode at all as the upcoming Ecodesign requirements becoming mandatory 12 months after publication of the Regulation will already reduce the permitted power demand to 0.5 Watt. (further, for power demand in off mode, the current Ecodesign requirement of 1.0 Watt will be reduced to 0.3 Watt).

Proposed revised criteria (second proposal)

Energy savings

Power demand in on-mode

The on-mode power demand of an electronic display shall not exceed the following Energy Efficiency Index (EEI) determinations in accordance to the equations as set out in Annex II of the *Commission Regulation (EU) No. ## of ## implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for electronic displays*:

(a)For electronic displays with a visible area of the screen ≤ 15.9 dm^2:

(i)At the date of adoption of the Decision: EEI ≤ 0.40

(ii)Two years from the date of adoption of the Decision: EEI ≤ 0.30

(a)For electronic displays with a visible area of the screen > 15.9 dm^2:

(i)At the date of adoption of the Decision: EEI ≤ 0.30

(ii)Two years from the date of adoption of the Decision: EEI ≤ 0.20

Power demand in a condition providing networked standby

(a)The power demand of electronic display with HiNA functionality, in a condition providing networked standby shall not exceed 8 W.

(b)The power demand of electronic displays without HiNA functionality in a condition providing networked standby shall not exceed 4 W.

Assessment and verification

The electronic display must be tested according to the measurement methods indicated in Annex III of the *Commission Regulation (EU) No. ## of ## implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for electronic displays*. The test report shall be submitted to the Competent Body with the application.

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Justification for requirements on power demand in on-mode:

*Overview of EEI values of **computer displays***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Screen diagonal [inch]	15	17	19	19	22	22	23	23	24	24	27
Screen area A [dm²]	6,2	7,97	9,95	9,95	13,34	13,34	14,58	14,58	15,88	15,88	20,1
Power demand on-mode P_m [W]	13	16	13	18	12	22	14	22	15	21	20
EEI (Ecodesign)	0,39	0,43	0,31	0,43	0,24	0,44	0,27	0,42	0,27	0,38	0,26
EEI (Energy Label)	0,28	0,29	0,21	0,29	0,15	0,28	0,17	0,26	0,17	0,24	0,19
Energy Label classification	A	A	A	A	A+	A	A+	A	A+	A	A+

*Overview of EEI values of **TVs displays***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Screen diagonal [inch]	19	20	22	22	24	24	24	24
Screen area A [dm²]	9,95	11,03	13,34	13,34	15,88	15,88	15,88	15,88
Power demand on-mode P_m [W]	17	18	20	22	19	21	23	25
EEI (Ecodesign)	0,40	0,40	0,40	0,44	0,34	0,38	0,41	0,45
EEI (Energy Label)	0,27	0,27	0,26	0,28	0,21	0,24	0,26	0,28
Energy Label classification	A	A	A	A	A+	A	A	A

≤ 15.9 dm²

	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
Screen diagonal [inch]	26	26	28	32	32	39	39	40
Screen area A [dm²]	18,4	18,64	21,61	28,23	28,23	41,93	41,93	44,11
Power demand on-mode P_m [W]	28	30	25	30	34	34	48	40
EEI (Ecodesign)	0,40	0,42	0,29	0,28	0,31	0,24	0,33	0,27
EEI (Energy Label)	0,28	0,30	0,22	0,21	0,24	0,17	0,24	0,19
Energy Label classification	A	A	A+	A+	A	A+	A	A+

	Model 17	Model 18	Model 19	Model 20	Model 21	Model 22	Model 23	Model 24
Screen diagonal [inch]	40	42	42	46	46	50	55	55
Screen area A [dm²]	44,11	48,63	48,63	58,34	58,34	68,93	83,4	83,4
Power demand on-mode P_m [W]	51	43	56	44	64	53	52	64
EEI (Ecodesign)	0,34	0,27	0,36	0,25	0,37	0,28	0,25	0,31
EEI (Energy Label)	0,24	0,19	0,24	0,16	0,24	0,17	0,14	0,17
Energy Label classification	A	A+	A	A+	A	A+	A+	A+

> 15.9 dm²

EU Ecolabel. Questions- comments on *Energy savings*

Criterion 1.2– Power management

Proposed revised criteria (first proposal)
Power management (a) *Manual Brightness Control*: The electronic display shall allow the user to manually control the backlight intensity. (b) *Automatic Brightness Control*: The electronic display shall have a light sensor that automatically adjusts the picture brightness to the ambient light conditions (Automatic Brightness Control, ABC). The ABC shall be enabled by default. In active mode at an ambient light level of 0 Lux the power consumption shall be at least 20 percent lower than in active mode at an ambient light level of 300 Lux. With ABC enabled, the minimum brightness should preferably be manually adjustable. (c) For external computer displays: The display shall be shipped with a default setting that automatically puts the device into a low-power mode (sleep or off mode) after an extended period of user inactivity (10 minutes at the most). *Assessment and verification*: The applicant shall provide the competent body with a declaration to certify that the appliance has been shipped in the power management settings stated above or better. The applicant shall submit a measurement protocol on the power consumption measured according to IEC 62087 at ambient light levels of 0 Lux and 300 Lux as well as their ratio to each other.

Stakeholder feedback

- Proposal for power management is supported for several stakeholders.
- Regarding power management for computer displays, the need is seen but this should be driven by the computer whenever connected.
- One of the stakeholders informs that regardless of current legislation, "0 lux" is an impractical level to quote as it cannot be reasonably verified. The IEC 62087 revision is quoting "≤ 1 lux".

Further research and evidence

According to the **proposed draft Ecodesign Regulation for electronic displays**,

- *"For an electronic display without forced menu, the peak luminance of on-mode condition of the display as delivered by the manufacturer (home mode/standard mode) shall not be less than 65% of the peak luminance of the brightest on mode condition provided by the electronic display using the picture settings for the brightest on-mode condition declared by the manufacturer"*
- *"For an electronic display with forced menu, the peak luminance of the home mode/standard mode condition shall not be less than 65% of the peak luminance of the brightest on mode condition, in a manufacturer pre-set mode, provided by the electronic display"*

Measurement system based on maximum settings defined and declared by the manufacturer might lead to a systematic variation of measurements of On-Mode power consumption, and might lead to displays being classified under better energy efficiency classes than they would be under real use conditions.

Proposed revised criteria (second proposal)
Power management *(a)Manual Brightness Control*: The electronic display shall allow the user to manually adjust the backlight intensity. *(b)Automatic Brightness Control*: The electronic display shall have a light sensor that automatically adjusts the picture brightness to the ambient light conditions (Automatic Brightness Control, ABC). The ABC shall be enabled by default. In on mode at an ambient light level of ≤ 1 Lux the power consumption shall be at least 20 percent lower than in on mode at an ambient light level of 300 Lux. With ABC enabled, the minimum brightness should preferably be manually adjustable. *Assessment and verification*: The applicant shall provide the competent body with a declaration to certify that the appliance has been shipped in the power management settings stated above. The applicant shall submit a test protocol on the on mode power consumption measured according to EN 62087 at ambient light levels of ≤ 1 Lux and 300 Lux as well as their ratio to each other.

EU Ecolabel. Questions- comments on *Power management*

4.b Cluster 1: Energy consumption criteria area – presentation and discussion

GPP IT Equipment

GPP Criterion: Minimum energy performance
Current criteria

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
All products shall meet the latest ENERGY STAR standards for energy performance, available at www.eu-energystar.org. **Verification:** Products holding a relevant Type 1 ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as a technical dossier of the manufacturer or a test report from a recognised body (e.g. body accredited to issue test reports according to standard ISO 17025) demonstrating that the criteria are met.	All products shall meet the latest ENERGY STAR standards for energy performance, available at www.eu-energystar.org. **Verification:** Products holding a relevant Type 1 ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted, such as a technical dossier of the manufacturer or a test report from a recognised body (e.g. body accredited to issue test reports according to standard ISO 17025) demonstrating that the criteria are met.

GPP Criterion: Minimum energy performance of displays – Draft revised criteria (1)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
A2. Minimum energy performance of displays The power demand of a computer displays shall not exceed the following Energy Efficiency Index (EEI) determinations in accordance to the equations as set out in Annex II of the *Commission Regulation (EU) No. ## of ## implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for electronic displays*[19]: (a) For electronic displays with a visible area of the screen ≤ 15.9 dm^2: (i) At the date of adoption of the Decision: EEI ≤ 0.50 (ii) Two years from the date of adoption of the Criteria: EEI ≤ 0.40 (b) For electronic displays with a visible area of the screen > 15.9 dm^2: (i) At the date of adoption of the Decision: EEI ≤ 0.40 (ii) Two years from the date of adoption of the Criteria: EEI ≤ 0.30 **Verification:**	**A2. Minimum energy performance of displays** The on-mode power demand of a computer displays shall not exceed the following Energy Efficiency Index (EEI) determinations in accordance to the equations as set out in Annex II of the *Commission Regulation (EU) No. ## of ## implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for electronic displays*[20]: (c) For electronic displays with a visible area of the screen ≤ 15.9 dm^2: (iii) At the date of adoption of the Decision: EEI ≤ 0.40 (iv) Two years from the date of adoption of the Criteria: EEI ≤ 0.30 (d) For electronic displays with a visible area of the screen > 15.9 dm^2: (iii) At the date of adoption of the Decision: EEI ≤ 0.30 (iv) Two years from the date of adoption of the Criteria: EEI ≤ 0.20

GPP Criterion: Minimum energy performance of displays – Draft revised criteria (2)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
Verification: The tenderer shall submit a test report carried out according to the measurement methods indicated in Annex III of the Commission Regulation (EU) No. ## of ## implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for electronic displays and as applicable at the time of purchase.	**Verification:** The tenderer shall submit a test report carried out according to the measurement methods indicated in Annex III of the Commission Regulation (EU) No. ## of ## implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for electronic displays and as applicable at the time of purchase.

GPP Criterion: Minimum energy performance of displays – Draft revised criteria (3)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
A3. Minimum energy performance of computers and displays Additional points shall be awarded in proportion to the improvement in energy efficiency of stationary computer devices and displays relative to the minimum requirements in A1 or A2 (as applicable). **Verification:** Submission by the tenderer of a test report that is in-line with the methods appropriate to the type of device, as specified in A1 and/or A2.	**A3. Minimum energy performance of computers and displays** Additional points shall be awarded in proportion to the improvement in energy efficiency of stationary computer devices and displays relative to the minimum requirements in A1 or A2 (as applicable). **Verification:** Submission by the tenderer of a test report that is in-line with the methods appropriate to the type of device, as specified in A1 and/or A2.

Major proposed changes

- Requirements aligned to the EEI equations of the proposed revised Ecodesign Regulation for Electronic Displays.
- Market research in support of the new Regulation together with data from the Topten project have been used to inform the specification of the Core and Comprehensive criteria.
- Stricter requirements for larger displays as compliance rate seems to be higher
- **Core criteria:** Intermediate performance level between proposed Tiers 1 and 2;
- **Comprehensive criteria:** Tier 2 level

- Dynamic criteria with new EEI values after two years.

GPP. Questions- comments on *minimun energy performance*

GPP Criterion: Display power management
Draft proposed criteria

Core criteria	Comprehensive criteria
AWARD CRITERIA	
	A4. Display power management Additional points shall be awarded to tenderers who are able to supply displays with the following advanced power management features: (i) *Automatic Brightness Control*: The computer monitor shall have a light sensor that automatically adjusts the picture brightness to the ambient light conditions. In on mode at an ambient light level of ≤ 1 Lux the power consumption shall be at least 20 percent lower than in on mode at an ambient light level of 300 Lux. (ii) *Other options to be discussed* **Verification:** The tenderer shall submit a test report demonstrating that the on mode power consumption measured according to EN 62087 is met.

GPP. Questions- comments on *power management*

1. Are automatic brightness controls available for displays and if so is this an appropriate Award Criteria?
2. Are there other power management features that should be considered?

5. Cluster 2: Hazardous substances – presentation and discussion

Summary of stakeholder feedback from Monday 12th horizontal meeting for both products, as well as the evidence base and EU Ecolabel and GPP criteria proposals.

5.a Cluster 2: Hazardous substances – presentation and discussion

Ecolabel

Ecolabel criteria 2(a/b): Hazardous substances
Outline criteria structure (1)

Proposed structure for the revised criteria (first proposal)

"Substitution of hazardous substances and mixtures in computers"

The following structure is proposed for the criteria, which will also need to include the standard hazard listing and a legal reference to the requirements in the Ecolabel Regulation 66/2010:

(a) Restricted substances in computers: A list would be compiled based on best practice by manufacturers and, as far as possible,

- Article 57 substances that have already been/are in the process of being substituted by leading manufacturers.
- The listing would be appended as an appendix of the Ecolabel Decision. The listing would include the Article 6(6)/6(7) requirement to exclude Candidate List SVHC's and Article 57 substances.

(b) Derogation framework: If the need for derogations is identified then these will, as far as possible, be structured according to the function of the substance and/or the relationship of the substance to a specific sub-component within a computer.

- Derogations will only be permitted for specific hazards if, after a screening of substance group substitutions, they are required.
- The hazards derogated would be defined by the hazard profile and market status of substitution options.
- Derogation conditions would be set that would be related to the point in the life cycle of the product where the hazard is most relevant.

Ecolabel criteria 2(a/b): Hazardous substances
Outline criteria structure (2)

(c) Assessment and verification: This would be specified for the restricted substance listing and for the derogation framework (if required).

- It is to be discussed if a restriction list could be verified by random analytical testing and if so the frequency of this testing.
- It is to be discussed the level at which verification of the classification/non-classification of substance groups within products could be workable. One possibility is for declarations to be obtained from tier 1 component suppliers.

Stakeholder feedback (1)

The level of ambition has to stay within the limits of possibility. Care needs to be taken with other Ecolabels' criteria – it is claimed that *'regrettable substitutions'* have been made as a result

- The industry manages well the absence of regulated substances and those of concern but has limited information on all substances in parts
- Manufacturers have not implemented hazard-based restrictions
- Ecolabel Regulation Article's 6(6) and 6(7) have a very broad scope – to what extent is there flexibility?
- SVHC restriction should be applicable at component not material level

Stakeholder feedback (2)

- Prioritisation of the main components and functions related to the product was generally supported
- Substitutes should have a better hazard profile than substances they substitute.
- There should be not only a black list but also a white list
- Verification should be strengthened, moving away from self-declarations to third party verified hazard evaluations and test reports

Hazardous substance sub-group (1)

Markus Stutz	Dell
Hans Wendschlag	Hewlett Packard
Claudia Albuquerque	LG
Steven Clayton	Samsung
Lein Tange	ICL-IP
Claus Ruediger	Bayer
Dr. Johanna Wurbs	UBA (Germany)
Søren Mørch Andersen	Danish EPA
Dirk Jepsen	Oekopol
Lauren Heine	Clean Production Action (USA)

Participation as observers:

Blanca Morales	EEB/BEUC
Bernd Kappenberg	CEFIC
Susanne Stark	VKI (Austria)

Hazardous substance sub-group (2)

Aims and objectives of the sub-group:

- Steer the overall approach to be taken with regards to the Ecolabel Regulation and the substitution potential of the best performing products on the market;
- Assist in developing a better understanding of the substitution potential for the product group;
- Review substitution information and derogation requests;
- Advise on how verification could work.

First telephone meeting took place 26th February 2014.

Screening and evaluation of evidence, Part 1
Candidate list and RoHS screening

IEC 62474 Declarable substance list for electrotechnical products was used as starting point for identifying relevant substances:

1. Substances that are already understood to have been eliminated from production;
2. RoHS exemptions that may be relevant to the product group but their current/post-sunset date relevance is to be confirmed;
3. Substances on which little is known about their potential relevance to the product group
4. Substances not deemed relevant to the product group based on the available information.

Screening and evaluation of evidence, Part 2
Compilation of screening matrix

Screening	Evidence base
RoHS (recast) Directive	• Relevance of exemptions identified from OEM restriction lists
RoHS ATP	• Oeko-Institut and Austrian EPA reports with recommendations on extended RoHS scope
ECHA Candidate List	• Substances of relevance to the product group using IEC 62474 Declaration List (see colour coded version appended) • ECHA and Member State risk assessments and dossiers (e.g. German BFR - PAHs)
Substitution analysis	• EU ENFIRO study of environment-compatible flame retardants • US EPA Printed Circuit Board and decaBDE evaluations • Green Screen assessments for TV enclosures and plasticisers • COWI and the Danish Technological Institute compilation for plastics
Industry substitutions and restrictions	• OEM chemical restriction lists (with a focus on SG members HP, Samsung, Dell, LG) • International Electronics Manufacturing Initiative (iNEMI) • EFRA and PINFA guides to flame retardant applications in electronic equipment • SubSport Case Story substitution database • OEM product and component specifications

Screening and evaluation of evidence
Screening of Bill of Materials/Components

Evidence gathered to date was structured into:

1. Components/sub-components where hazardous substances are/may be found
2. Substance groups related to required functions and which are associated with specific components

Screening and evaluation of evidence
Identification of 'current hazard benchmarks'

Substance group	Where can it be found in the product?		Current hazard benchmarks
	Component	Sub-component	
S1. Flame retardants	Printed Circuit Boards	S1.1 Motherboard	○ Tetrabromobisphenol (TBBPA) (H410, P or vP) CAS No. 79-94-7.
		S1.2 Memory modules (RAM)	
		S1.3 Graphics card (VD RAM)	
	CPU and GPU's	S1.4 CPU/GPU chip set and cooling system	*Pending stakeholder feedback*
	Electrical/data connections	S1.5 Internal connectors and switches	○ Ethane bis (pentabromophenyl) (EBP) CAS No 84852-53-9 with Antimony Trioxide synergist CAS No 1309-64-4 ○ Ethylene 1,2 bis(tetrabromophthalimide) (EBTBP) CAS No 32588-76-4
		S1.6 Power supply unit and transformer (internal/external)	*Pending stakeholder feedback*
		S1.7 External power cables	
	Drives	S1.8 Data storage drives (HDD or SSD) and optical drives	*Pending stakeholder feedback*
	Housing	S1.9 External casing	○ Tetrabromobisphenol (TBBPA) (H410, P or vP) CAS No. 79-94-7. ○ Ethane bis (pentabromophenyl) (EBP) CAS No 84852-53-9 with Antimony Trioxide synergist CAS No 1309-64-4

Screening and evaluation of evidence
'Proposed substitution benchmarks'

Where can it be found in the product?		Current hazard benchmarks	Proposed substitution benchmarks
Component	**Sub-component**		
Printed Circuit Boards	S1.1 Motherboard	○ Tetrabromobisphenol (TBBPA) (H410, P or vP) CAS No. 79-94-7.	○ Dihydrooxaphosphaphenanthrene (DOPO) CAS No 35948-25-5. ○ Aluminium hydroxide (ATH) CAS No 21645-51-2. ○ Fyrol PMP (Aryl Alkylphosphinate) CAS No. *not available*. ○ Aluminium or zinc salts of diethylphosphinic acid (AlPi, ZnPi) with Melamine Polyphosphinate synergist.
	S1.2 Memory modules (RAM)		
	S1.3 Graphics card (VD RAM)		
CPU and GPU's	S1.4 CPU/GPU chip set and cooling system	*Pending stakeholder feedback*	*Pending stakeholder feedback*
Electrical/data connections	S1.5 Internal connectors and switches	○ Ethane bis (pentabromophenyl) (EBP) CAS No 84852-53-9 with Antimony Trioxide synergist CAS No 1309-64-4 ○ Ethylene 1,2 bis(tetrabromophthalimide) (EBTBP) CAS No 32588-76-4	○ Melamine cyanurate + phosphorus synergist: CAS No 15541-60-3. ○ Aluminium or zinc salts of diethylphosphinic acid (AlPi, ZnPi) with Melamine Polyphosphinate synergist. ○ Magnesium hydroxide (MDH) CAS No.1309-42-8.
	S1.6 Power supply unit and transformer (internal/external)	*Pending stakeholder feedback*	*Pending stakeholder feedback*
	S1.7 External power cables		
Drives	S1.8 Data storage drives (HDD or SSD) and optical drives	*Pending stakeholder feedback*	*Pending stakeholder feedback*
Housing	S1.9 External casing	○ Tetrabromobisphenol (TBBPA) (H410, P or vP) CAS No. 79-94-7. ○ Ethane bis (pentabromophenyl) (EBP) CAS No 84852-53-9 with Antimony Trioxide synergist CAS No 1309-64-4	○ Triphenyl phosphate (CAS 115-86-6). ○ Resorcinol Bis (Diphenyl Phosphate) (CAS 57583-54-7). ○ Bisphenol A Bis (diphenyl Phosphate) (CAS No. 5945-33-5) ○ RDX: Resorcinol bis(2,6-dixylenyl phosphate) CAS No. 139189-30-3.

Screening and evaluation of evidence
'Proposed restrictions'

Current hazard benchmarks	Proposed substitution benchmarks	Proposed restrictions
○ DEHP (CAS No. 117-81-7) ○ BBP (CAS No.85-68-7) ○ DBP (84-74-2)	○ DIDP CAS No. 26761-40-0. ○ DINP CAS No. 28553-12-0. ○ Trioctyl trimetallate (TOM/TOTM) CAS No. 3319-31-1 ○ Dioctyl terephthalate (DOTP) CAS No.6422-86-2.	○ DEHP, BBP, DBP, DIBP, DMEP, DIPP, DPP, DnPP and DnHP shall not be present in external cables and power packs. ○ Medium Chained Chlorinated Paraffins (MCCP's) Alkanes C14-17 shall not be present in external cables and power packs.
Pending stakeholder feedback	*Pending stakeholder feedback*	*Pending stakeholder feedback*
○ Lead stabiliser has now been entered onto the Candidate List.	○ Feedback is requested on relevant stabiliser formulations given the hazard profile of Calcium acetylacetonate, which includes H361 (sub-classification to be confirmed).	○ Lead shall not be present in external cables, wires and connecting cords at or greater than 300 ppm.

Hazardous substance criteria
Overview of the proposal (v2, 29/04/14)

2(a) Substances of Very High Concern (SVHC's)
2(b) Restrictions based on hazard classifications

2(b)(i) Overall rules applying to specified components and substance groups
2(b)(ii) Derogations applying to substances with a favourable hazard profile and those required for the function of the product

2(c) Restriction of substances in specified component parts

Hazardous substance criteria
Criteria 2(a): How is it proposed to work?

2(a) Substances of Very High Concern (SVHC's)

- Strict requirement transposed directly from Ecolabel Regulation
- Verification that Article 57 and 59 (Candidate List) substances are not present
- 0.10% threshold for derogation if there are no substitutes available
- Proposed bounding of the scope:

For the purpose of this criterion verification shall be provided, as a minimum, for the component parts identified in 2(b).

Hazardous substance criteria
Criteria 2(b): How is it proposed to work?

2(b) Restrictions based on hazard classifications

2(b)(i) Overall rules applying to specified components and substance groups

- Substances meeting the requirements of classification on the EU Ecolabel hazard listing shall not be present at concentrations greater than 0.10%
- Specific concentration limits, and any subsequent Adaptations to Technical Progress (ATP's), shall take precedence.

Hazardous substance criteria
Criteria 2(b): How is it proposed to work?

Proposed bounding of the scope:

> *[Substances] shall not be present in the specified component parts of a computer at or above a concentration limit of 0.10%. For the purpose of this criterion the main component parts of a computer/electronic display are defined as comprising….(see next slide)*

The components identified are then *linked to substance groups which require verification.*

Hazardous substance criteria
Definition of component parts for verification

Computers	**Televisions and Displays**
Circuitry • Printed Circuit Boards >10 cm^2 • **Central Processing Units and Graphics Processing Units (including cooling units)** • Electrical solder and metal contacts Internal devices • Data storage and optical drives • Electrical and data connections (internal and external) External elements • External cables and power packs • External housing and enclosure materials • External casing and surfaces of peripheral devices Displays • Display screen glass Batteries • Notebook or tablet batteries	Circuitry and connectors • Printed Circuit Boards >10 cm^2 • Electrical solder and metal contacts • Electrical and data connections (internal and external) Internal devices • Data storage (smart devices) External elements • External cables • External housing and enclosure materials • External casing and surfaces of **remote controls** Displays • Display screen glass • **Liquid Crystal Display unit** • **Screen LED backlight units**

Proposed exclusions from the scope: Homogeneous parts weight <25 g and metal chassis.

Hazardous substance criteria
Criteria 2(b): How is it proposed to work?

2(b)(ii) Derogations applying to substances with a favourable hazard profile and those required for the function of the product

In accordance with Article 6(7) of Regulation (EC) No 66/2010 the substance groups in table 2.2 are specifically derogated from the requirements in Article 2(b)(i) in accordance with conditions stipulated.

Two groupings of derogations identified from the evidence base and stakeholder input:

1. Reflecting substitutes with an improved hazard profile ('White list')
2. Substances required for the function of the product

White list identification: OEM restrictions, stakeholders, literature

How has the white list been translated?
Example 1: Flame retardants in plastic enclosures and casings (S1.9)

Current hazard benchmark:

- Tetrabromobisphenol (TBBPA) (H410, P or vP) CAS No. 79-94-7. Status: Harmonised classification of H400,H410
- Ethane bis (pentabromophenyl) (EBP) CAS No 84852-53-9 (353 self-notifications, H413) with Antimony Trioxide synergist CAS No 1309-64-4 (Harmonised classification, H351)

Proposed substitute benchmarks:

- Triphenyl phosphate (CAS 115-86-6) Status: Self-notifications in the C&L Inventory indicate classification with H400 and H410.
- Resorcinol Bis (Diphenyl Phosphate) (CAS 57583-54-7). Status: 60 self-notifications in the C&L Inventory indicate classification with H412. 34 self-notifications indicate no classification.
- Bisphenol A Bis (diphenyl Phosphate) (CAS No. 5945-33-5) Status: Harmonised classification with H413 however the opinion of RAC is that it should be declassified.
- RDX: Resorcinol bis(2,6-dixylenyl phosphate) CAS No. 139189-30-3. Status: Harmonised classification with H413.

Evidence base: OEM feedback, PINFA, EFRA, ENFIRO, US EPA, Green Screen

Proposed hazard derogation: H412, H413 + condition on PTFE anti-dripping agent

Substances required for their function
Example 1: LED doping

Current hazard benchmark:

- Gallium arsenide *(GaAs)* (CAS. 1303-00-0)
  Status: 23 notifications in the C&L
  Inventory indicates (H301) (H331) (H400) (H410)
- Gallium Nitride (GaN) (CAS. 25617-97-4)
  Status: 24 notifications in the C&L
  Inventory indicate (H317)

Evidence base: Oeko Institut study, OEM feedback

Proposed hazard derogation with conditions: H301, H331, H400, H410
- Control of workforce exposure during manufacturing
- LED specification to minimise chip thickness

Hazardous substance criteria
Verification of Criteria 2(b): Substance groups

Computers	**Televisions and Displays**
• Flame retardants in PCB's, CPU's, electrical/data connectors, disc/optical drives and computer casings; • Plasticisers in cables, power packs and wiring • Plastic stabilisers in external cables • Plastic colorants in external casings • Biocides in plastic and rubber parts of peripheral devices and external cables • Solders and metal contacts on PWB and connecting internal devices • Thermal conducting elements of CPU's and GPU's • Coolants used within CPU/GPU cooling systems • Battery electrolytes in portable devices • External metals and associated coatings • Screen glass fining agents	• Flame retardants in PCB's, electrical/data connectors, disc drives and display casings; • Plasticisers in cables, power packs and wiring • Plastic stabilisers in external cables • Plastic colorants in external casings • Biocides in plastic and rubber parts of remote controls and external cables • Solders and metal contacts on PWB and connecting internal devices • Thermal conducting elements on PCB’s • External metals and associated coatings • Screen glass fining agents • Liquid crystals in TFT display units • LED doping and luminescent materials

Verification along the supply chain: The applicant shall obtain declarations of compliance from, as a minimum, suppliers of the specified component parts.

Hazardous substance criteria
Verification of Criteria 2(b): Substance groups

Applicants shall declare that, where present in the specified component parts, the listed substances do not meet the criteria for CLP classification.

Verification of hazards reflects wording in other product groups but with an additional option reflecting industry best practice:

> *….the robustness of the evidence on which [self-classifications] are based shall be independently verified…or by reference to Governmental or third party verified evidence studies. Evidence from the use of third party verified screening tools which are equivalent, or can be read across, to the [EU Ecolabel] hazard list shall be accepted.*

Hazardous substance criteria
Criteria 2(c): How does it work?

2(c) Restriction of substances in specified component parts

'Blacklist' compiled from OEM restriction lists and literature

The final product and, where stipulated, specified component parts shall not contain the hazardous substances listed in table 2.3 at greater than the specified concentration limits and/or shall comply with the specified restrictions.

Hazardous substance criteria
Criteria 2(c): Restricted substance list

Computers	**Televisions and Displays**
1. Plasticisers 2. Plastic stabilisers 3. Plastic colourants 4. Biocides 5. Plastic contaminants 6. Mercury in backlights 7. Metal solder 8. Electrical contacts 9. Thermal conductors 10. External steel parts 11. External metallic coatings 12. Screen glass	1. Plasticisers 2. Plastic stabilisers 3. Plastic colourants 4. Biocides 5. Plastic contaminants 6. Mercury in backlights 7. Metal solder 8. Electrical contacts 9. Thermal conductors 10. External steel parts 11. External metallic coatings 12. Screen glass

Verification along the supply chain: The applicant shall obtain declarations of compliance from, as a minimum, suppliers of the specified component parts.

How has the black list been compiled?
Example 1: Plasticisers

Substance group	Restriction	Concentration limit	Verification
1. Plasticisers	DEHP, BBP, DBP, DIBP, DMEP, DIPP, DPP, DnPP and DnHP shall not be used in external cables and power packs.	Sum total concentration limit of 0.1%	*Test method to be specified*
	Medium Chained Chlorinated Paraffins (MCCP's) Alkanes C14-17 shall not be used in external cables and power packs.	Sum total concentration limit of 0.1%	*Test method to be specified*

Identification: Restriction complemented by substitutes (see S2.1)

Evidence base: ECHA SVHC List, IEC 62474, OEM restriction lists

Hazardous substance criteria
Verification of Criteria 2(c)

Specified reflecting the random testing practices of OEM's and EPEAT:

- Testing, where required, shall be carried out upon application for each production model licensed
- Retesting once a year thereafter, with results then to be communicated to the relevant competent body.
- Failure of a test result during a license period shall result in retesting for the specific model.
- If the second test fails then the license shall be suspended for the specific product line.
- Remedial action will then be required in order to re-instate the license.

Final call for derogation requests
Functions for which there is no substitute

Discussions within the sub-group identified a number of potential derogations that *may be required*, including Candidate List substances at <0.1% in main components

Deadline for submission of Derogation Requests to IPTS for evaluation:
13th June 2014

Please use the derogation request form which is available from the BATIS online consultation system

Ecolabel. Feedback from computers AHWG2

- General agreement that for 2a and 2b the scope can be limited to the listed components parts and that this can also be taken to mean 'homogenous parts'
- The 25g threshold was not felt to be needed if the components parts listing is comprehensive, these parts should then be verified
- It was queried as to what % of the product is addressed by the component part list
- Some concern was raised about the proposal for third party certification of hazard profiles, it was proposed that joint entries in the C&L Inventory should be accepted
- The paragraph in 2a relating to the exemption of substances or mixtures that change their properties upon processing was queried – this may prevent issues along the life cycle being addressed
- The potential for breakdown products should be better addressed and evaluated in the evidence base – assumptions are being made about stability over time
- The proposal for further testing after the license has been granted was felt to create potentially too much of a burden for Competent Bodies

Ecolabel. Additional questions comments on *Hazardous substances*

5.b Cluster 2: Hazardous substances – presentation and discussion

GPP IT Equipment

GPP criteria B1-2: Hazardous substances
Current criteria (1)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
The background lighting of LCD monitors shall not contain more than 3.5 mg of mercury on average per lamp. **Verification:** All products carrying the EU Ecolabel will be deemed to comply. Other type I Ecolabels fulfilling the above criteria can also be accepted. Other appropriate means of proof will also be accepted. Note that after 31st December 2011 this issue will be regulated through Regulation 2011/65/EU (3.a)	The background lighting of LCD monitors shall not contain more than 3.5 mg of mercury on average per lamp. **Verification:** All products carrying the EU Ecolabel will be deemed to comply. Other type I Ecolabels fulfilling the above criteria can also be accepted. Other appropriate means of proof will also be accepted. Note that after 31st December 2011 this issue will be regulated through Regulation 2011/65/EU (3.a)

GPP criteria B1-2: Hazardous substances
Current criteria (2)

	Substances in plastic parts hazardous to health Plastic parts heavier than 25g do not contain flame retardant substances or preparations that are assigned any of the following risk phrases as defined in Council Directive No. 1272/2008: - R45 (may cause cancer). - R46 (may cause heritable genetic damage). - R60 (may impair fertility). - R61 (may cause harm to the unborn child). **Verification:** Products holding a relevant Type 1 ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.

GPP-specific issues

- Chemical criteria can be complex for procurers to verify
- Focus therefore proposed on key areas of concern and OEM activity:

  - Flame retardants in PCB's and external casings
  - Plasticisers in external power cables

- The challenge is how to define 'favourable' substitutions
- A limited number of further substance restrictions could be selected as technical specifications.

Note: Self-declaration as a form of verification is unsuitable for procurement

Proposal: Third party verification where there are no official classifications

Industry award criteria proposal

Halogen-free components should be a GPP Award Criteria:

> *'Additional points will be awarded for computers/electronic displays that have low bromine and chlorine content in the product motherboard laminate, excluding components, with the maximum substance concentrations as defined in IEC61249-2-21'*

IEC 61249-2-21 defines a concentration limit of 900ppm for bromine present in the resin of the PCB.

This can potentially provide the basis for laboratory testing as a form of verification.

GPP criteria B1: Mercury in display backlights
Draft revised criteria (1st proposal) (1)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
B1. Mercury in display backlights Mercury shall not be present in LCD backlights at a concentration of greater than 0.1 mg per lamp. **Verification:** Tenderers shall provide an analytical testing report for the LCD backlights showing compliance or shall demonstrate that an alternative technology is used that does not require mercury.	**B1. Mercury in display backlights** LCD backlights shall be mercury free. **Verification:** Tenderers shall demonstrate that an alternative technology is used that does not require mercury.

GPP criteria B2: Flame retardants in PCB's/casings
Draft revised criteria (1st proposal) (2)

	B2. Flame retardants in Printed Circuit Boards and casings With reference to the EU Ecolabel hazard list (see Annex 1) where a flame retardant is used then the only hazard classifications they may carry are H412 and H413. **Verification:** The hazard classification or non-classification of the flame retardants used shall be independently verified by a third party toxicologist or by reference to Governmental or third party verified evidence studies. Evidence from the use of third party verified screening tools which provide results that are equivalent,shall be accepted.

GPP criteria B3: Plasticisers in external cables
Draft revised criteria (1st proposal) (3)

	B3. Plasticisers in external cables With reference to the EU Ecolabel hazard list (see Annex 1) plasticisers used in external cables may only carry the hazard classifications H412 and H413 **Verification:** The hazard classification or non-classification of the flame retardants used shall be independently verified by a third party toxicologist or by reference to Governmental or third party verified evidence studies. Evidence from the use of third party verified screening tools which provide results that are equivalent,shall be accepted.

GPP criteria B4: Plasticisers in external cables
Draft revised criteria (1st proposal) (4)

AWARD CRITERIA	
	B4. Flame retardants in other components With reference to the EU Ecolabel hazard list (see Annex 1) points shall be awarded according to the restriction of hazards in internal connectors, CPU's, disc drives, Optical drives (e.g. DVD) and power supply units. The flame retardant is used may only carry the hazard classifications H412 and H413. **Verification:** The hazard classification or non-classification of the flame retardants used shall be independently verified by a third party toxicologist or by reference to Governmental or third party verified evidence studies. Evidence from the use of third party verified screening tools which provide results that are equivalent,shall be accepted.

EU GPP Criteria: Hazardous substances

Questions

- Is the focus on flame retardants and plasticisers sufficient? *if not which other substance groups should be addressed and on what basis?*
- Does identifying the permitted hazards with reference to the hazards restricted (EU Ecolabel list) work?
- Is third party verification by a toxicologist or hazard specialist a realistic possibility as an alternative to self-declaration?
- Could assessments for which equivalence can be demonstrated be accepted?

GPP. Feedback from computers AHWG2

- It was not seen as necessary given the shift to LED backlighting for the criteria to address mercury It was proposed that there should be some core criteria – plasticisers in external cables was proposed
- Procurers ‘like to check boxes’ so it is better for criteria to refer to specific materials or substances for ease of verification
- The proposal may be on the borderline of what a procurer might be able to handle – are there any websites or links to hazards that they could check to provide support?

GPP. Additional questions comments on *Hazardous substances*

6. Cluster 3: Life time extension – presentation and discussion

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised Ecolabel criteria proposals, first GPP proposals.

6.a Cluster 3: Life time extension – presentation and discussion

Ecolabel

1. Criterion 3.1 – Commercial guarantee
2. Criterion 3.2 – Repairability
3. Criterion 3.3 – Upgreadability

Criterion 3.1 – Commercial guarantee

Proposed revised criteria (first proposal)
Commercial guarantee: The manufacturer shall offer a commercial guarantee to ensure that the television will function for at least two years. This guarantee shall be valid from the date of delivery to the customer. *Assessment and verification*: The applicant shall declare the compliance of the product with these requirements and additionally provide a copy of the guarantee document to the competent body.

Stakeholder feedback

• Other approach should be considered to ensure that products have a long lifetime. Besides an extended commercial guarantee, more criteria should be included addressing "performance quality "of the devices during their lifetime.

•There is not seen much added value of this criterion because the DIRECTIVE 1999/44/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees, gives a minimum guarantee of 2 year.

Further research and evidence

- According to the WRAP "Buying Specification Guides for Durability and Repair – LCD Television", guarantees are available for 3 years on some mid-cost televisions and 5 years on some high-cost models. However, **guarantee does not necessarily mean that products are repaired.**

- The most critical driver of TV replacement in nearly all countries is a desire to trade up in size, followed by wanting to own a flat panel TV with improved picture quality. These factors, being the reason for currently **decreasing lifetimes of TVs cannot be influenced by extended guarantees.**

It is proposed not to retain the current TV criterion on a commercial guarantee in the revised proposal for electronic displays. To avoid an earlier replacement of the whole television or external computer display in case of defective single components, **the repairability of products is a major factor facilitating a lifetime extension.**

Ecolabel. Questions- comments on *comercial guarantee*

Criterion 3.2 – Repairability

Proposed revised criteria (first proposal)

Repairability:

For the purpose of undertaking repairs and replacements of worn out parts, or to upgrade older parts and components, the following criteria shall be fulfilled:

(a) Design for repair: All major repairable/replaceable components of televisions and external computer displays, if applicable, such as, screen assembly, backlight, printed circuit board, inverters and speakers shall be easily accessible and exchangeable by the use of universal tools (i.e. widely used commercially available tools).
As a minimum the following should be used: The back cover should be one piece and secured by screws to enable multiple access cycles. The backing chassis/PCBs should be removable in one assembly to access the screen components. Screw numbers should be minimised (e.g. by lugs and slots). Screw heads should be standardised with no more than three head sizes. Removable electrical connectors (e.g. clip or screw) should be used rather than soldered or crimped joints where access is required. The following should NOT be used: self-tapping screws, irreversible snap-fits or adhesives where access is required. Tamper-proofing (such as plastic covers or labels) should only be used to ensure authorised repair under warranty and should not inhibit other repairs outside of the warranty period.

(b) Repair manual: The applicant shall provide clear instructions in form of a repair manual (in hard or soft copy) to enable replacing of these key components.

(c) Availability of spare parts: The applicant shall ensure that spare parts are available for a certain time following the end of the model production.

  (i) Televisions: at least seven years;

  (ii) External computer displays: at least five years.

(d) Reasonable repair costs: The applicant shall ensure that the cost of individual spare parts is less than 20% (LCD screen assembly: less than 60%) of the cost of a new device.

(e) Repair Service / Information: Information should be included in the user instructions or the manufacturer's website to let the user know where to go to obtain professional repairs and servicing of the device, including contact details as appropriate.

Assessment and verification: The applicant shall declare the compliance of the product with these requirements to the competent body. Additionally, the applicant shall provide

- A copy of the repair manual
- A copy of the user instructions
- A list with prices of available spare parts.

Stakeholder feedback

- Retail prices vary per country and also over time. It may be more appropriate to require manufacturers to develop and disclose the ways in which they ensure that service part costs do not create a repair barrier (more flexible approach).

- LCD screens as a replacement service part are usually more than 50% of the new TV prices.

Stakeholder feedback

- Another stakeholder states that in its current wording the criterion on reasonable repair costs is not practical to implement and does not take into account total cost of repairs.
- A business model which is in compliance with this requirement could necessitate a higher initial price to the consumer.
- To stimulate such costly services, in addition to the requirements proposed in the current criteria document, a requirement to guarantee easy access to the necessary repair information, diagnostic tools and spare parts to third party reuse or repair shops or organisations is strongly supported.

Further research and evidence

- WRAP (2011) -most common faults that cause failure and shorten the product's lifetime:
  - Screen faults – due to damage, sometimes caused by impact;
  - Power circuit board faults;
  - Main circuit board faults – including hardware and microchip software;
  - Damage to connections – often between circuit boards; and
  - Damage to television stands.

No existing quality standards for certain components which the EU Ecolabel could rely on.

Proposed revised criteria (second proposal)

Repairability:

For the purpose of undertaking repairs and replacements of worn out components or parts, the following criteria shall be fulfilled:

(a) Design for repair: The following components of electronic displays, if applicable, shall be easily accessible and exchangeable by the use of universal tools (i.e. widely used commercially available tools as screwdriver, spatula, plier, or tweezers):

(i) Screen assembly and LCD backlight,

(ii) stands, and

(iii) power and control circuit boards.

Indicatively, the following should be used: The back cover should be one piece and secured by screws to enable multiple access cycles; it should not use irreversible snap-fits. The backing chassis / PCBs should be removable in one assembly to access the screen components. Screw numbers minimised (e.g. by lugs and slots). Screw heads standardised with no more than three head sizes. Detachable electrical connectors (e.g. clip or screw) should be used rather than soldered or crimped joints where access is required. The following should not be used: self-tapping screws, irreversible snap-fits or adhesives where access is required. Tamper-proofing (such as plastic covers or labels) should only be used to ensure authorised repair under warranty and should not inhibit other repairs outside of the warranty period. Special tools include e.g. screwdrivers with special heads (e.g. torx), heat gun, thermal pad, soldering iron.

(…)

Proposed revised criteria (second proposal)

(…)

(b) Repair manual: The applicant shall provide clear disassembly and repair instructions (e.g. hard or soft copy, video) being publicly available, to enable a non-destructive disassembly of products for the purpose of replacing key components or parts for repairs.

(c) Repair Service / Information: Information should be included in the user instructions or the manufacturer's website to let the user know where to go to obtain professional repairs and servicing of the electronic display, including contact details as appropriate. Service should not be limited exclusively to applicant's Authorized Service Providers.

(d) Availability of spare parts: The applicant shall ensure that original or backwardly compatible spare parts are publicly available for a certain time following the end of the model production:

(i) Televisions: at least seven years

(ii) External computer displays: at least five years

Assessment and verification: The applicant shall declare the compliance of the product with these requirements to the competent body. Additionally, the applicant shall provide a copy or online-version of the repair manual and the user instructions.

Major proposed changes

- The proposed criteria for reasonable repair costs have been deleted.
- The components that have to be exchangeable have been further detailed.
- An explicit distinction between repairs that might be undertaken by end-users and others only by professional repair services has not been made. Clarification is often provided in the product manual which repairs might be done by the consumer without affecting the manufacturers' guarantee.

- *Major proposed changes*

- To support customer's choice for third party reuse or repair shops or organisations. In order to facilitate them easy access to the necessary repair information, diagnostic tools and spare parts, the criteria on spare parts and repair manual have been specified by having to be "publicly available"; the criterion on repair service includes a requirement that it must not be limited exclusively to applicant's Authorized Service Providers.

- Repair manual: video demonstration of disassembly has been added as possibility.

- The criteria on availability of spare parts have been further detailed regarding the possibility of being "original or backwardly compatible".

Ecolabel. Questions- comments on *repairability*

Criterion 3.3 – Upgradeability

Consultation questions
• How do stakeholders expect the outlined upgrade devices to facilitate a prolonged lifetime of television products? How is the overall environmental impact of the additional modular device, initially adding material and energy consumption to the existing television, to be assessed? • Are there any other upgradeability options (e.g. certain number and kind of interfaces, upgradeable hardware components etc.) applicable to televisions and/or external computer displays?

Stakeholder feedback

- A manufacturer provided information that hardware upgrade of its current TV models is not possible. For new functionalities, however, not necessarily a replacement of a TV-set is required. For newly introduced broadcast standards, set-top-boxes are available in the market.

- By one of the stakeholders, the example of Samsung's upgrade kit (Evolution Kit) for their high-end Smart TVs was provided. TVs with this upgradeability can be updated to the current models functionality.

Further research and evidence

- A so called upgrade kit enabling software and hardware upgrades for ensuring compatibility with future standards is only provided by one manufacturer so far and not common on the market.

- Further, the most critical driver of TV replacement in nearly all countries is a desire to trade up in size, followed by wanting to own a flat panel TV with improved picture quality according to the market analysis carried out within the Ecolabel criteria revision process.

It is proposed not to include a new criterion on upgreadibility to the product group televisions / displays at all.

Ecolabel. Questions- comments on *upgreadibility*

6.a Cluster 3: Life time extension – presentation and discussion

GPP IT Equipment

GPP Criterion: Repairability - Current criteria

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
The tenderer shall guarantee the availability of spare parts for at least 3 years from the time that production ceases. **Verification:** Products holding a relevant Type 1 ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.	The tenderer shall guarantee the availability of spare parts for at least 5 years from the time that production ceases. **Verification:** Products holding a relevant Type 1 ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.

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GPP Criterion: Repairability – Draft revised criteria (1)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
C2. Continued availability of spare parts The tenderer shall guarantee the availability of spare parts for at least 3 years from the time of purchase. **Verification:** The tenderer shall provide a declaration that original or backwardly compatible spare parts, including rechargeable batteries (if applicable), will be available to the contracting authority or through a service provider.	**C2. Continued availability of spare parts** The tenderer shall guarantee the availability of spare parts for at least 5 years from the time of purchase. Parts with improved specifications shall be backwardly compatible. **Verification:** The tenderer shall provide a declaration that original or backwardly compatible spare parts, including rechargeable batteries (if applicable), will be available to the contracting authority or through a service provider.

GPP Criterion: Repairability – Draft revised criteria (2)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
C3. Upgradeable and replaceable parts The following components of computers, if applicable, shall be easily accessible and replaceable by the use of universal tools (i.e. widely used commercially available tools as screwdriver, spatula, plier, or tweezers): Displays (i) Screen assembly and LCD backlight (ii) Power and control circuit boards (iii) Stands Guidance to be provided in an Annex on tools and access to define easily replaceable. **Verification:** A manual shall be provided by the tenderer which shall include an exploded diagram of the device illustrating the parts that can be accessed and replaced. It shall also be confirmed which parts are covered by service agreements under the warranty.	**C3. Upgradeable and replaceable parts** The following components of computers, if applicable, shall be easily accessible and replaceable by the use of universal tools (i.e. widely used commercially available tools as screwdriver, spatula, plier, or tweezers): Displays (i) Screen assembly and LCD backlight (ii) Power and control circuit boards (iii) Stands Guidance to be provided in an Annex on tools and access to define easily replaceable. **Verification:** A manual shall be provided by the tenderer which shall include an exploded diagram of the device illustrating the parts that can be accessed and replaced. It shall also be confirmed which parts are covered by service agreements under the warranty.

GPP Criterion: Repairability – Draft revised criteria (3)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
C5. Continued availability of spare parts The tenderer shall provide a price list for the main component parts (list to specified/inserted) that are replaceable during the 3 year period stated in C2. Points shall be awarded according to the competitiveness of the replacement costs. **Verification:** The tenderer shall provide a price list for original or backwardly compatible spare parts, including rechargeable batteries (if applicable).	**C5. Continued availability of spare parts** The tenderer shall provide a price list for the main component parts (list to specified/inserted) that are replaceable during the 5 year period stated in C2. Points shall be awarded according to the competitiveness of the replacement costs. **Verification:** The tenderer shall provide a price list for original or backwardly compatible spare parts, including rechargeable batteries (if applicable).

GPP. Questions-comments on *repairability*

1. Do the proposals reflect requests made by procurers seeking greater re-assurance?
2. Is the parts listing sufficient to maintain product performance?
3. How can lower costs for replacement parts best be incentivised through the tender process?

7. Cluster 4: End of Life management: Design and material selection – presentation and discussion

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised Ecolabel criteria proposals, first GPP proposals.

7.a Cluster 4: End of Life management: Design and material selection – presentation and discussion

Ecolabel

1. Criterion 4.1 – Material selection and information
2. Criterion 4.2 – Design for disassembly and recycling
3. Criterion 4.3 – Packaging

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Criterion 4.1 – Material selection and material information

Proposed revised criteria (first proposal)

"Material selection and information"

(a) Variety of plastics: Plastic parts shall be of one polymer or be of compatible polymers for recycling if greater than 25 g in mass.

(b) Surface coating: All plastic materials used for covers/housing shall have no surface coatings / metal inlays incompatible with recycling or reuse unless such coating is technically required.

(c) Content of recyclates: The cover/housing incl. stand of the television or external computer display shall have a content of post-consumer recyclates material of not less than 10% by mass.

(d) Material information facilitating recycling:

(i) Plastic parts with a mass greater than 25 grams shall be marked in accordance with ISO 11469 and ISO 1043, sections 1-4. For plastic parts > 200 grams, the marking should be enough large and located in a visible position in order to be easy to be identified by workers of specialized recycling firms.

(ii) Data on the nature and amount of hazardous substances in the computer shall be gathered and provided in accordance with Council Directive 2006/121/EC and the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Assessment and verification:

The applicant shall declare compliance of the product with these requirements to the competent body.

The applicant shall provide the competent body with an exploded diagram of the television or external computer display in written or audio-visual format, labelling the main components, especially plastic parts greater than 25 grams in mass, as well as identifying any hazardous substances in components. The information shall include documentation to prove the conformity to the above mentioned ISO standards and additional specifications of the marking (dimension and position).

Information regarding hazardous substances shall be provided to the competent body in the form of a list of materials identifying material type, quantity used and location.

The applicant shall provide the competent body with a declaration stating the percentage post-consumer recycled content. In case of surface coating / metal inlays, the applicant shall provide the competent body with a declaration proving the technical demand.

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Stakeholder feedback

Variety of plastics:

- Variety of polymer types in the housing of TVs/monitors should be clearly limited. Llimitation of functional additives is a key prerequisite for any closed loop recycling attempt.

- Criterion could be supported, but it should be noted that different methodologies may be used to determine whether certain polymers are compatible or not.

Surface coating/metal inlays:

- Scope of surface coating needs to be clarified since not all surface coating is incompatible with recycling.

- Several stakeholders supports the total restriction of coating/inlays due to the hindering of recycling.

Stakeholder feedback

Content of recyclates:

- Concerns over material reliability and increased economic cost. The targets should be adjusted significantly so that it becomes feasible for manufacturers to start commercial experiments at a smaller scale.

- Another stakeholder asks for a much higher recycled content than the current 10% being stimulated. TCO Certified Edge Label shows asking for > 65% post-consumer-recyclate.

Stakeholder feedback

Content of recyclates:

- Lowering it to 5% being an improvement as the present criterion might be a problem for the license holders.
- Public Waste Agency of Flanders (OVAM) confirmed that recyclates are available on the market.
- Certification scheme QA-CER started in Belgium. The certification distinguishes 3 levels of certification.
- Recyclates could also be screened for the presence of certain hazardous substances.

Further research and evidence

- The study '*Disassembly analysis of slates: Design for repair and recycling evaluation*' by Fraunhofer IZM (2013) indicates that plastics are separated in white (including light grey) plastics which are of significantly higher recycling value, and black plastics. **Metal foils** attached to plastic parts reduce the value of the plastics fraction, and might be given to an additional shredding process for separation. **Coating and plastics parts attached to bulk plastics parts reduce the value of the plastics** fractions PC/ABS, white mixed plastics and black mixed plastics from the perspective of the dismantler.

- On the other hand, according to Köhnlechner (2014), sorting based on density separation as well as electrostatic properties of different polymer types can achieve high quality output for ABS and HIPS – independent from the plastic colour.

Further research and evidence

- In 2013, EFRA finalised a pilot project on the recycling of plastics containing flame retardants (FR). Low plastics recycle rate in Europe: **lack of information on the polymer type, the FR applied and the huge variety of different plastics types** used.

- The QA-CER system is a third party verified quality management system developed by a Belgian certification body and the Flemish Plastics Centre. The system is based on ISO 9001, as well the EN standards EN 15347 relating to the characterisation of waste polymers and EN 15343 relating to the traceability of waste polymers.

Further research and evidence

- Peeters et al. - considering the **flame retardants incorporated into plastic components**, particularly casings and enclosures.

- The study looked at PC/ABS. In the scenario examined an 82% pure PC/ABS could be obtained post shredding, density and optical separation.

- However, in reality the plastic recovered is required to achieve a fire protection standars for the recyclate certifying its fire rating. The result is a recommended upper limit of recycled content of 10%.

Proposed revised criteria (second proposal)

"Material selection and information to improve recyclability"

(a) Variety of plastics:

(i) Plastic parts with a mass greater than 25 grams may consist of a single polymer or a polymer blend compatible for the recycling. The compatibility for recycling shall be verified.

(ii) Overall in the product there shall be a maximum of 4 types of plastic used of plastic parts with a mass greater than 25 grams.

(iii) Plastic used for housings and enclosures shall consist of a maximum of two polymers in a form that is compatible with recycling. The compatibility for recycling shall be verified.

(b) Surface coating / metal inlays: All plastic materials used for housings and enclosures shall have no surface coatings or metal inlays.

(c) Material information to facilitate recycling: Plastic parts with a mass greater than 25 grams shall be marked in accordance with ISO 11469 and ISO 1043, sections 1-4. For plastic parts greater than 25 grams the CAS number of flame retardants shall additionally be marked "FR(ISO 1043-4 code) - CAS No". For plastic parts > 200 grams, the marking should be large enough and located in a visible position in order to be easily identified by workers of specialised recycling firms.

Exemptions are made in the following cases:

(i) Where the marking would impact on performance or functionality of the plastic part, including light guides

(ii) Where parts cannot be marked because there is not enough available appropriate surface area for the marking to be of a legible size to be identified by a recycling operator;

(iii) Where marking is technically not possible due to the moulding method; or

(iv) Where the addition or location of marking causes unacceptable defect rates under quality inspection, leading to unnecessary wastage of materials

(…)

Proposed revised criteria (second proposal)

(…)

(d) Recycled content: Plastic parts of the housings and enclosures as well as of structural elements with a mass > 25 grams shall have a total content of post-consumer recyclates material of not less than 10% by mass. Where the post-consumer recyclates content is higher than 25% a declaration may be made in Box 2 of the Ecolabel (see Criterion 7.2). Recycled content shall be demonstrated according to the requirements of ISO 15343. Recyclates may contain flame retardants that are specifically derogated in Criterion 2(c).

Printed circuit boards as well as transparent plastics that form part of display units are exempted from this requirement.

(e) Recyclability of plastic containing flame retardants: The potential for closed loop recycling in a new electronic product of plastic required to meet fire protection standards shall be greater than 25%.

(f) Recyclability of metal housings and enclosures: The recyclability of metals and alloys used for casings shall be verified.

Assessment and verification:

- The applicant shall declare compliance of the product with these requirements to the Competent Body.
- The applicant shall provide the Competent Body with an exploded diagram of the electronic display in written or audio-visual format, identifying the plastic parts greater than 25 grams in mass, their polymer composition and compatibility for the recycling, as well as associated markings and identifications of flame retardants.
- The information shall include documentation to prove the conformity to the above mentioned ISO standards, specifications of the marking (dimension and position) and, where applicable exemptions. A technical justification shall be provided where an exemption applies.
- The applicant shall provide the Competent Body with documentation verifying traceability for the post-consumer recycled content according to the above mentioned ISO standard.
- The recyclability of the housing and enclosures shall be verified by a declaration from a permitted treatment operation in accordance with Article 23 of Directive 2008/98/EC (the WEEE Directive) that there is an end-market for the materials.

Ecolabel. Questions- comments on *material selection and information*

Criterion 4.2 – Design for disassembly and recycling

Proposed revised criteria (first proposal)
"Design for disassembly and recycling" For recycling purposes computers shall be designed so that (a) They facilitate easy (manual) disassembly in order to separate display units >100 cm² and printed circuit boards >100 cm². (b) An efficient (manual) disassembly of display units >100 cm² and printed circuit boards >100 cm² by a specialized firm can be done by the use of widely used commercially available tools (i.e. pliers, screw-drivers, cutters). (c) One person alone can be able to disassemble display units >100 cm² and printed circuit boards >100 cm². (d) Electrical modules can be easily removed from the case. *Assessment and verification*: The applicant shall declare compliance with the requirements to the competent body. The applicant shall provide a 'test disassembly report' to the competent body including disassembly procedures, tools needed for the disassembly and the time (in seconds) needed for the different steps to disassemble the components during the testing. The report shall be submitted either in writing including photo or drawing, or in video format.

Stakeholder feedback

- The criteria proposed are proposed by several stakeholders. Separate treatment of the respective components allows a much higher efficiency of the following material recycling steps.
- To consider ongoing developments for their targeted treatment (focussing on a quantitative recovering of the included critical raw materials).
- Not significant value in the 3rd party (recycler) verification since manufacturers' own disassembly and time measurement would be a rather conservative estimate compared to recyclers' actual operation.

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Further research and evidence

Identifying Critical Raw Materials from an EU perspective

- The list is based on a time horizon of ten years, so geological scarcity was not a central consideration, the increasing demand for products containing CRM's cited instead as an important factor. Recyclability and the potential for substitution were also factors considered in the creating the initial list.

Initial list of critical raw materials at EU level

Antimony	**Indium**
Beryllium	**Magnesium**
Cobalt	**Niobium**
Fluorspar	**PGMs (Platinum Group Metals)[a]**
Gallium	**Rare earths[b]**
Germanium	**Tantalum**
Graphite	**Tungsten**

- Lithium and chromium were at the time on the borderline of being identified as CRM.
- A specific recommendation is also made that: '*…overall material efficiency of critical raw materials should be achieved by…minimising raw material losses into residues from where they cannot be economically-recovered.*'

Further research and evidence

Identifying metal, CRM and plastic components of life cycle significance

Life cycle assesments studies form preliminary background report have been screened further in order to identify hot spots relating to specific metals (including CRM's), and other relevant materials

Screening of LCA evidence for relevant metals or plastics

Study	Component hot spots	Sub-component hot spots	Metals (including CRM's), and other relevant materials
Plasma Television Displays			
Hischier, R & I, Baudin (2010)	Based on the normalised results for human toxicity and photochemical oxidation at the production phase: • PCB • Housing • Plasma display unit (resource depletion)	• Silicon wafer, • PWB Inductors and capacitors • Aluminium parts • Plastic parts • Gas in the filled panel	• Palladium production (SO_2 emissions). • Aluminium production (Vanadium emissions)

Further research and evidence

Identifying metal, CRM and plastic components of life cycle significance (2)

Study	Component hot spots	Sub-component hot spots	Metals (including CRM's), and other relevant materials
LCD Television Displays			
Hischier,R & I, Baudin (2010)	Based on the normalised results for human toxicity,freshwater ecotoxicity and other mid-points at production phase: • LCD module • PWB	It was not possible to identify sub-component hot spots from the published study.	• Vanadium and Nickel to water. • Chrome steel
Bakker.C, Ingenegeren.R, Devoldere.T, Tempelman.E, Huisman.J and D, Peck (2012)	Based on ReCiPe indicators. Components with significant impacts in the manufacturing phase: • PCB • Aluminium chassis	It was not possible to identify sub-component hot spots from the published study.	

European Commission

Further research and evidence

Critical metals and raw materials inventory

Indicative BOM's have been identified for a LED LCD PC monitor and TV (Oeko-Institut). CRM's are concentrated in a small number of main components, primarily the PCB and contacts and LED backlights. Sub-components can then be identified that would then require extraction in order to recover the CRM's.

Indicative occurrence of high value metals and CRM's in electronic displays

Metal	Content per LCD (LED backlit) [mg]		LCA hot spot	EU CRM	Occurrence in the product
	TV	Monitor			
Silver	580	520			PCB and contacts (100%)
Indium	260	82		√	Internal coating on display (100%)
Gold	140	200			PCB and contacts (100%)
Yttrium	4.8	3.20		√	Background illumination (100%)
Palladium	44	40	√	√	PCB and contacts (100%)
Europium	0.09	0.06		√	Background illumination (100%)
Cerium	0.30	0.2		√	Background illumination (100%)
Gallium	4.90	3.30		√	Background illumination (100%)
Gadolinium	2.30	1.50		√	Background illumination (100%)

Further research and evidence

Market potential for dismantling and CRM recovery

Relevant market commentary on the potential for their recovery and recycling has therefore been reviewed. The three main sources are Oeko-Institut, JRC-IES and WRAP.

-The collection of WEEE in Europe has grown rapidly since the introduction of the WEEE Directive in 2003. Treatment centres tend to be a mixture of large processing centres. Centres may consist of a combination of manual dismantling and sorting of components with bulk shredding and detoxification. Selected components may then be sent to specialist.

Further research and evidence

Market potential for dismantling and CRM recovery (2)

-The main plastics fraction (e.g. PC/ABS casing), steel and aluminium chassis, alloy casings, external power cables and PCB larger than 10 cm^2 are generally extracted and passed on to the relevant markets. **Manual pre-preatment, including complete removal of specific components followed by subsequent recovery of the precious metals would enable a significantly more efficient recovery of various metals, CRM's and REE's.** (silver, gold and palladium recovery rate could be increased in selected scenarios from 12-26% to 90%.)

A recent industry survey conducted by WRAP suggested that to a great extent removal by manual treatment of circuit boards (88-94%), plastics incorporating brominated flame retardants (82%) and LCD displays (88%) already takes place.

Further research and evidence

Market potential for dismantling and CRM recovery (3)

Plastic casings

JRC-IES states in their Ecodesign case study that plastics containing flame retardants are generally not recyclable after shredding. A recent study on industry trials suggested that a purity rate up to 82% can be achieved for the separation of some plastics, as PC/ABS containing phosphorus FR's.

Technically there is not understood to be a barrier to use of this recyclate, although the plastic and the incorporated FR must first be identified, and such separation for recycling is not yet commonplace. REWARD/EFRA pilot study highlights the importance of plastics marking and the provision of information about the FR's used as being important to facilitate recovery and recycling.

Further research and evidence

Market potential for dismantling and CRM recovery (4)

Printed Circuit Boards (PCB's)
Copper, gold, silver and palladium. Currently, CRMs are primarily recovered from circuit boards at large metal refining facilities designed to handle complex streams of metal containing wastes.

LCD/LED display units
The organic components are generally shredded and may then be incinerated, and the glass along with the oxidized metals remains bound in an inert slag. Indium lost through dissipation.

Several pilot studies however there are currently no large scale recycling facilities for the separation and refining of indium from the display units and the rare earths from the background illumination. The very low indium content and lack of another significant metal in LCD unit makes the economics of recovery very challenging.

Germany is understood to be considering storage of dismantled display units for recycling at a later date.

The luminescent materials and rare earth elements contained in display units e.g. yttrium, europium, terbium, were sent to landfill following shredding. However, several mobile pilot plants are being developed to recover metals like copper, manganese, zinc, yttrium, indium.

Further research and evidence

Market potential for dismantling and CRM recovery(5)

PMMA display light guide

The plastic light guides within an LCD display constitute a large proportion of the plastic used in a TFT display. In particular the PMMA light guide has been identified as a sub-component that is readily identified and which is readily recyclable according to IEC 62635.

JRC-IES identified that, without prior manual separation, the PMMA light guide would be dispersed among other shredded fractions. On the other hand, PMMA sorted from other fractions before shredding can be recycled for the production of new boards with the same quality.

Further research and evidence

Time threshold for extraction of key components

JRC-IES studies:
literature review, a campaign of measurement of the time for the dismantling of displays carried out in an Italian recycling plant and identification and assessment of suitable thresholds for the time taken to extract key components.

Electronic LCD displays currently at their end of life but that have been designed in the past 5-8 years. According to manufacturing associations, modern displays have a significant lower mass and also their design for dismantling purposes has been improved.

The analysis has identified several possible thresholds for the total time taken to extract key components, differentiated according to different sizes of devices. Two types of key components: Printed Circuit Boards and Thin Film Transistor units. Single time threshold for the extraction of both of these components to introduce less uncertainty and would lead to greater flexibility as regards the design of products that are compliant within the expected thresholds.

LEDs are often mounted in rails and strings, similarly to CCFL, thus their extraction is analogous to that of CCFL tubes. Therefore, both types of backlight units have a similar dismantling sequence and analogous times for extraction.

Proposed revised criteria

"Design for dismantling and recycling"

For recycling purposes electronic displays shall be designed so that:

(a) For the following components an efficient manual disassembly by one person in a specialised company shall be possible to carry out using common commercially available tools (i.e. pliers, screw-drivers, cutters and hammers as defined by ISO 5742, ISO 1174, ISO 15601):

(i) Printed Circuit Boards >10 cm^2

(ii) Thin Film Transistor (TFT) unit >100 cm^2 and film conductors

(iii) Polymethyl Methacrylate (PMMA) board light guide

(b) The time required for extract these components shall not exceed the following:

(i) 220 seconds for display with a size smaller than 25 inches (diagonal screen size);

(ii) 320 seconds for displays with a size greater than or equal to 25 inches and smaller than 40 inches (diagonal screen size);

(iii) 480 seconds for displays with a size greater than or equal to 40 inches and smaller than 55 inches (diagonal screen size).

(…)

Proposed revised criteria

(…)

(c) At least one of the following optional components shall also be efficiently manually disassembled with reporting of the additional time requirement based on the fastest identified sequence following on from (b):

(i) LED backlight units

(ii) Speaker unit magnets (for display sizes greater than or equal to 25 inches)

(iii) HDD drive (if applicable in the case of smart devices)

Assessment and verification:

The applicant shall declare compliance with the requirements to the competent body.

The applicant shall provide a 'test disassembly report' to the competent body including the adopted disassembly sequence (steps and procedures), identification of the optional components selected, the reported timings and the tools needed for the disassembly. Reference shall be made to the extraction timing method outlined in the user manual.

The report may be submitted either in writing or in digital format, supported by photos, drawings and/or videos.

The reported timings for disassembly and the related disassembly sequence shall be provided for verification by either:

(i) A third party, testing body.

(ii) A specialised recycling firm that is a permitted treatment operation in accordance with Article 23 of Directive 2008/98/EC.

Assessment and verification:

Two alternative options - a third party option and a 'real-life' option in a WEEE treatment facility. Manufacturer establishes a suitable dismantling sequence for its product, and then uses this as the basis for commissioning the testing/measurement of the timing.

Self-verification in manufacturers labs is not deemed to be appropriate - benefit of an OEM's familiarity with their own product.

Development of a standardized method for the measurement of the timing of dismantling. The timing for this process is likely to extend beyond the programme for adoption of the new Ecolabel criteria for displays. In the interim a comparable method would therefore need to be outlined in the User Manual based on the work to date by JRC-IES.

Box 1: Outline steps for the measurement of the time for the extraction of certain target parts in electronic displays

Terms and definitions

- *Target parts:* Parts and/or components that are targeted for the extraction process.

Operating conditions for the extraction

- *Extraction sequence to be followed:* The Extraction sequence to be followed has to be set out prior to the measurement. The sequence shall be documented and provided to the third party carrying out the extraction.
- *Tools for extraction:* The extraction operations should be performed using manual or power-driven standard tools.

Extraction time measurement

- *Measurement sample:* The sample of EEE to be used for the measurement shall be undamaged.
- *Measurement:* The extraction time measurement consists of the measurement with an instrument of the time elapsed between the starting of the first operation listed in the extraction sequence documentation and the end of the last one.

Ecolabel. Questions- comments on *desing for dismantling and recycling*

Criterion 4.3 – Packaging

Consultation questions
• The technical analysis and literature review of LCA studies (see Task 3) clearly shows that the packaging of computers and displays is of negligible relevance with regard to environmental impacts. Against this background it shall be discussed if this criterion should be retained?

European Commission

Stakeholder feedback

- Consistency with other EU policies
- The consumer who buys the product could be very disappointed in the EU Ecolabel when the product is not packed in an environmentally sound way.
- If included, harmonization with EPEAT, the IEEE1680.2 Standard is recommended.
- The requirements on plastic packaging in the different EU Ecolabel product groups are confusing, both quantitatively and qualitatively. The percentages vary from zero to 100 % of a variety of materials such as recycled material, recyclable material, renewable material, biodegradable material, compostable material, etc.

Stakeholder feedback

- The impact of the packaging over the full life cycle is usually marginal. EU Ecolabel should address main environmental impacts.

- The proposed percentage is definitely too high. A fixed minimum percentage of recycled material for the different plastics used in packaging is neither feasible nor acceptable, because it does not allow guaranteeing the required level of quality and performance.

- The use of recycled material is environmentally beneficial only if: material losses in the recycling loop are limited; the substitution ratio is higher than about 0.7. When the virgin material performance is improved in such a way that the thickness can be reduced, then the use of recycled material may become environmentally more damaging.

Stakeholder feedback

- Computers are not packaged on 'plastic bags". They may be protected by a plastic film which must ensure effective protection from humidity, dust, etc. Using recycled material in such relatively thin, but very protective, films may not be possible.

- Biodegradability or compostability, according to EN 13432, is not a guarantee of superior environmental performance. The inadequately managed fraction that will end in landfill will generate methane. Most sustainable packaging material as proven by a life-cycle analysis for the respective application. Recycling content or biodegradability per se are no indicators for a more sustainable or "greener" packaging. It is questionable whether biodegradable packaging brings any environmental advantage.

Further research and evidence

The term "biodegradable" is not equivalent to "compostable". Whereas biodegradability is an Inherent property that is independent of time and space, compostability is specifically related to the conditions in a composting plant. The European standard (EN 13432 standard for bioplastic packagings and EN 14995 for plastic waste) requires 90% degradation within 90 days.

According to UBA (2012) -biodegradable plastics are fully degraded they do not have an added value from ecological perspective as they disintegrate into water and CO_2 and do not provide any nutrients to the compost.

Composting is not effective as no energy is recovered as long as it does not go into biogas production systems where energy can partly be recovered.

Further research and evidence

German Federal Environment Agency "Analysis of the environmental impact of biodegradable plastic packaging"

-The study resulted that biodegradable plastics used in packaging, which are made from renewable biomass sources, do not prove to offer an overall ecological advantage. Whereas their CO_2 emissions and consumption of petroleum of bioplastics are lower, they are negative in a number of other environmental areas particularly through the use of fertilisers. Moreover, they cause higher levels of particulate emissions.

Packaging made of biodegradable plastics was also unsuccessful in retail. During the 2009 period covered in the study, the market share of bioplastics packaging was a maximum of 0.5 per cent.

The overall conclusion of the study was that bioplastic bags have no ecological advantages over common plastic bags. Reusable bags made of fabrics and other durable materials are in fact the real ecological alternative.

Proposed revised criteria (second proposal)
"Packaging"
Where cardboard boxes are used, they shall be made of at least 80 % recycled material.
Where plastics are used for the final outer packaging, they shall be made of at least 75 % recycled material. Plastics used for protectively covering the product within the outer packaging are exempted from this requirement.
Assessment and verification: A sample of the product packaging shall be provided on application, together with a corresponding declaration of compliance with this criterion. Only primary packaging, as defined in European Parliament and Council Directive 94/62/EC, is subject to the criterion.

Major proposed changes

It is proposed to delete the requirement concerning biodegradable or compostable plastic materials as they did not proof to be of environmental benefit.

Regarding the requirement of using recycled plastic materials, an exemption has been added for plastic materials that are used for protecting the electronic display against damage (e.g. shock absorbance).

Ecolabel. Questions- comments on *packaging*

7.b Cluster 4: End of Life management: Design and material selection – presentation and discussion

GPP IT Equipment

GPP criteria: Design for recycling Current criteria (1)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
Additional points will be awarded for ease of disassembly and ease of recycling plastic parts: - Connections shall be easy to find, accessible with commonly available tools, and as standardised as possible. - Plastic parts heavier than 25g shall have a permanent marking identifying the material, in conformity with ISO 11469: 2000 or equivalent standard. Excluded from this criterion are extruded plastic materials and the light-guide of flat panel displays. Plastic parts shall be of one polymer or compatible polymers, except for the cover, which shall consist of no more than two types of polymer, which are separable.	Additional points will be awarded for ease of disassembly and ease of recycling plastic parts: - Connections shall be easy to find, accessible with commonly available tools, and as standardised as possible. - Plastic parts heavier than 25g shall have a permanent marking identifying the material, in conformity with ISO 11469: 2000 or equivalent standard. Excluded from this criterion are extruded plastic materials and the light-guide of flat panel displays. Plastic parts shall be of one polymer or compatible polymers, except for the cover, which shall consist of no more than two types of polymer, which are separable.

(...)

GPP criteria: Design for recycling
Current criteria (2)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
(…)	
Verification: A test report shall be submitted with the application detailing the dismantling of the personal computer. It shall include an exploded diagram of the personal computer labelling the main components as well as identifying any hazardous substances in components. It can be in written or audiovisual format. Information regarding hazardous substances shall be provided to the authority in the form of a list of materials identifying material type, quantity used and location.	**Verification:** A test report shall be submitted with the application detailing the dismantling of the personal computer. It shall include an exploded diagram of the personal computer labelling the main components as well as identifying any hazardous substances in components. It can be in written or audiovisual format. Information regarding hazardous substances shall be provided to the authority in the form of a list of materials identifying material type, quantity used and location.

GPP criteria: Design for recycling Current criteria (3)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
(...)	
	Recycled content and recyclability (for PCs, notebooks and monitors) Additional points will be awarded if the external plastic case of the system unit, monitor and keyboard has a post consumer recycled content of not less than 10% by mass. **Verification:** A declaration by the manufacturer stating the percentage post consumer recycled content.

GPP criteria: Design for recycling
Draft proposed criteria (1)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
	H1. Recyclability of plastics and metals The recyclability of the metal or plastic housings used and enclosures shall be verified. Plastic used for housings and enclosures shall consist of a maximum of two polymers and shall not have surface coatings or metal inlays. **Verification:** Recyclability shall be verified by a declaration from a permitted treatment operation in accordance with Article 23 of Directive 2008/98/EC (the WEEE Directive) that there is an end-market for the materials.

GPP criteria: Design for recycling
Draft proposed criteria (2)

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATIONS	
H2. Marking of plastics Plastic parts of greater than 200 grams shall be marked in accordance with ISO 11469 and ISO 1043, sections 1-4. Marking shall not be required where it would impact on the performance or functionality of the plastic part, including screen light guides. **Verification:** Documentation shall be provided showing conformity to the above mentioned ISO standards. A technical justification shall be provided where marking cannot be applied.	**H2. Marking of plastics** Plastic parts of greater than 100 grams shall be marked in accordance with ISO 11469 and ISO 1043, sections 1-4. Marking shall not be required where it would impact on the performance or functionality of the plastic part, including screen light guides. **Verification:** Documentation shall be provided showing conformity to the above mentioned ISO standards. A technical justification shall be provided where marking cannot be applied.

GPP criteria: Design for recycling
Draft proposed criteria (3)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
H3. Plastic recycled content Points shall be awarded for post-consumer recyclate content incorporated into internal and external housings, casings and structures at or greater than 10% by weight. This criteria shall not be applied to products with metal casings. **Verification:** The tenderer shall provide documentation verifying traceability for the post-consumer recycled content according to ISO 15343 or equivalent standards or schemes.	**H3. Plastic recycled content** Points shall be awarded for post-consumer recyclate content incorporated into internal and external housings, casings and structures at or greater than25% by weight. This criteria shall not be applied to products with metal casings. **Verification:** The tenderer shall provide documentation verifying traceability for the post-consumer recycled content according to ISO 15343 or equivalent standards or schemes.

GPP. Questions- comments on *design for recycling*

1. Is third party verification of recyclability feasible?
2. How is recycled content currently verified by manufacturers?
3. Is analytical testing a possibility for verification where the recyclate has achieved a fire protection rating?
4. Is the information currently collected to verify recycled content claims sufficient to enable verification according to EN 15343?
5. Further information is required from stakeholders regarding metal used for enclosures and their recyclability

GPP criteria: Dismantling potential of devices Draft proposed criteria (1)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
I1. Dismantling potential of devices Points shall be awarded for time efficient manual disassembly and extraction of the following listed components from devices: **Displays (including integrated units)** (v) Printed Circuit Boards >10 cm² (vi) Thin Film Transistor unit and film conductors in display unit >100 cm^2 Extraction shall be possible using widely used commercially available tools (i.e. pliers, screw-drivers, cutters and hammers as defined by ISO 5742, ISO 1174, ISO 15601).	**I1. Dismantling potential of devices** Points shall be awarded for time efficient manual disassembly and extraction of the following listed components from devices: **Displays (including integrated units)** (vi) Printed Circuit Boards >10 cm² (vii) Thin Film Transistor unit and film conductors in display unit >100 cm^2 (viii) Polymethyl Methacrylate (PMMA) film light guide (screen size >15 inches) Extraction shall be possible using widely used commercially available tools (i.e. pliers, screw-drivers, cutters and hammers as defined by ISO 5742, ISO 1174, ISO 15601).

GPP criteria: Dismantling potential of devices Draft proposed criteria (2)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
The time required to extract display components shall not exceed the following: a) 220 seconds for screen sizes smaller than 25 inches; b) 320 seconds for screen sizes greater than or equal to 25 inches and smaller than 40 inches; c) 480 seconds for screen sizes greater than or equal to 40 inches and smaller than 55 inches.	The time required to extract display components shall not exceed the following: a) 220 seconds for screen sizes smaller than 25 inches; b) 320 seconds for screen sizes greater than or equal to 25 inches and smaller than 40 inches; c) 480 seconds for screen sizes greater than or equal to 40 inches and smaller than 55 inches.

GPP criteria: Dismantling potential of devices Draft proposed criteria (3)

Core criteria	Comprehensive criteria
AWARD CRITERIA	
Verification: The tenderer shall provide a 'test dismantling report' detailing the dismantling sequence, the reported timings and the tools needed for the disassembly. The disassembly sequence shall be provided for verification by either: (i) A third party, testing body. (ii) A specialised recycling firm that is a permitted treatment operation in accordance with Article 23 of Directive 2008/98/EC. The report may be submitted either in writing or in digital format, supported by photos, drawings and/or videos.	**Verification:** The tenderer shall provide a 'test dismantling report' detailing the dismantling sequence, the reported timings and the tools needed for the disassembly. The disassembly sequence shall be provided for verification by either: (i) A third party, testing body. (ii) A specialised recycling firm that is a permitted treatment operation in accordance with Article 23 of Directive 2008/98/EC. The report may be submitted either in writing or in digital format, supported by photos, drawings and/or videos.

GPP. Questions- comments on *dismantling potential of devices*

8. Cluster 5: Corporate responsibility – presentation and discussion

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised criteria proposals.

1. Criterion 5.1 – Labour conditions during manufacturing
2. Criterion 5.2 – Conflict-free minerals' in electronics

European Commission

Criterion 5.1 – Labour conditions during manufacturing

- Electronic displays products are associated with both, environmental and social impacts in their life-cycle.
- The EU Ecolabel's Social Task Force initiated a discussion whether social requirements shall be introduced into the criteria documents.
- However, implementation and verification are challenging:
  - *Compliance with social standards is generally process-based and has to be formulated at company level*
  - *Verification mechanisms (and their real impact on the social criteria) vary – depending on the type of hotspot, level of supply chain and existence of approaches and initiatives: Self-declaration, industry code of conduct (CoC), international CoC, membership in industry initiatives, self-audits, third-party verifications*

- A guarantee of compliance with social criteria throughout the supply chain seems very difficult.
- Possible breaches of social requirements (e.g. discovery of poor health/safety conditions at specific manufacturing sites)
  might have strong impacts on the overall reputation of the Ecolabel.

Proposed options for a new criterion (first proposal)
Option (a): No social criteria at all
Option (b): Social labour conditions during manufacture The applicant must have a code of conduct or a comparable policy that requires adherence to the core labour standards of the International Labour Organisation (ILO Core Labour Standards). This code of conduct and/or policy must also address the assembly-stage of the production even in cases the assembly is not carried out by the applicant. The applicant must ensure that the code of conduct is communicated to all suppliers / subcontractors (up to the level of product assembly) together with a requirement that these shall also comply with a code of conduct that follows the ILO Core Labour Standards. *Assessment and verification*: The applicant shall declare the compliance with these requirements and shall provide a copy of the code of conduct and a description of the implementation process at suppliers/sub-contractors (up until assembly) to the competent body.
Option (c): Social labour conditions during manufacture Fundamental principles and rights with respect to the universal human rights, as specified in the applicable core labour standards of the International Labour Organisation (ILO Core Labour Standards) shall be complied with during manufacture (assembly) of the European eco-labelled products. *Assessment and verification*: Option (1): The applicant shall declare the compliance with these requirements to the competent body. Option (2): The applicant shall declare the compliance with these requirements to the competent body and provide evidence by third-party verified certification of the production sites (up until assembly), e.g. by SA8000.

European Commission

Stakeholder feedback

- Inclusion of criteria on labour conditions was generally supported.
- Criteria should have strong verification in order to avoid problematic situations.
- Verification, however, should not be too expensive.
  Might be demanded only in the next revision period.
- Avoid the phrase 'guarantee compliance' (cannot be done without progressive improvement). It should be worked from the base up to know where to bring about positive change in the facilities where the certified products are manufactured.
- It should be clearly communicated to which tier of the supply chain the criteria are addressed to bring progressive improvement and where reasonable efforts are accepted.

Further research and evidence

-The Comparison of voluntary CSR schemes: EICC, TCO, SA8000

EICC

- Applied by around 60 manufacturers
- Not based on fundamental ILO labour conventions but rather on national laws which might be weaker in some countries
- Freedom of Association and Right to Collective Bargaining falls behind ILO standards
- Regional minimum wages, not „living wages" to meet basic needs
- Employment security not included at all.
- Monitoring based on self-evaluation; systematic independent external audits not part of the codex

European Commission

Further research and evidence

-The Comparison of voluntary CSR schemes: EICC, TCO, SA8000

TCO

15 companies with certified displays

Linkage to 8 ILO core conventions, UN conventions on the Rights of the Child (Art. 32), national health & safety legislations and labour laws in the manufacturing countries;

„ Living wages" are not addressed

Monitoring based on different options:

EICC member + third-party audits at production facilities

Brand owner SA8000 certified or carrying out production at SA8000 certified facilities + third-party audits at production facilities; allowing interpretation (=> Western located headquarter might be SA8000 certified)

Self-documentation + third-party audits at production facilities

12 months grace period possible

European Commission

Further research and evidence

-The Comparison of voluntary CSR schemes: EICC, TCO, SA8000

SA8000

Based on 8 ILO core conventions, further ILO conventions, UN Declaration of Human Rights, UN conventions on the Rights of the Child

Going far beyond ILO core conventions, addressing:

Living wages

Principles on health and safety

Working hours

The standard strives towards feasible implementation also under restrictions by national laws

Third-party accredited certification scheme by approved SA8000 auditors

European Commission

Major proposed changes

- **Option A (required):**
  - 8 ILO core conventions
  - Additional focus on ICT social hotspots:
    - Working hours (based on ILO convention)
    - Minimum Wages (based on ILO convention)
    - "Living wages" (based on SA8000 criteria)
- **Option B (optional):** Criteria fully reflecting SA8000 standard

- **Verification** (both options):
  - Compliance at 90% of first-tier suppliers (final assembly)
  - Independent third-party certification by accredited auditors
  - Publication of suppliers' list and social audit reports (transparency)

European Commission

Option A (required)

Proposed new criterion (second proposal, Option A)
Labour conditions during manufacturing (required) The applicant shall demonstrate that the product is manufactured under working practices that promote good labour relations and working conditions by proving that more than 90% of the first-tier suppliers (final product assembly) comply with the following ILO Conventions: a) **Child Labour**: i. ILO Core Convention "Minimum Age" (No. 138) ii. ILO Core Convention "Worst Forms of Child Labour" (No. 182) b) **Forced and Compulsory Labour**: i. ILO Core Convention "Forced Labour" (No. 29) ii. ILO Core Convention "Abolition of Forced Labour" (No. 105) c) **Freedom of Association and Right to Collective Bargaining**: i. ILO Core Convention "Freedom of Association and Protection of the Right to Organise" (No. 87) ii. ILO Core Convention "Right to Organise and Collective Bargaining" (No. 98) d) **Discrimination**: i. ILO Core Convention "Discrimination (Employment and Occupation)" (No. 111) ii. ILO Core Convention "Equal Remuneration" (No. 100) e) **Working Hours**: i. ILO Convention "Hours of Work (Industry)" (No. 1)

(…)

Joint Research Centre

European Commission

Option A (required)

Proposed new criterion (second proposal, Option A)
Labour conditions during manufacturing (required)

(…)

f) **Remuneration**:

i. ILO Convention "Minimum Wage Fixing" (No. 131)

ii. **Living wage**: The applicant shall ensure that wages paid for a normal work week shall always meet at least legal or industry minimum standards and shall be sufficient to meet the basic needs of personnel and to provide some discretionary income; with reference to SA8000 Consolidated Guidance "Remuneration" regarding definition, implementation, auditing and evidence of compliance

Assessment and verification:

The applicant shall declare compliance with these requirements to the Competent Body providing the copies of the certificates of Accredited Certification Bodies (CBs) accredited by Social Accountability Accreditation Services (SAAS) showing the compliance with the above requirements in more than 90% of the first-tier suppliers (final product assembly).

Additionally, the applicant shall provide to the Competent Body

- A list of first-tier suppliers representing at least 90% of procurement expenditure for final product assembly of computers.
- The independent social audit reports to verify that he is fulfilling its obligations according to this mandate.

Additionally, the applicant shall publish the independent social audit reports of the first-tier suppliers online to provide evidence to interested consumers.

European Commission

Option B (optional)

Proposed new criterion (second proposal, Option B)

Labour conditions during manufacturing (optional)

The applicant shall demonstrate that the product is manufactured under working practices that promote good labour relations and working conditions by proving that more than 90% of the first-tier suppliers (final product assembly) comply with the following principles (derived from SA8000, including ILO all fundamental as well as further relevant labour conventions):

a) **Child Labour**: No use or support of child labour; policies and written procedures for remediation of children found to be working in situation; provide adequate financial and other support to enable such children to attend school; and employment of young workers conditional.

b) **Forced and Compulsory Labour**: No use or support for forced or compulsory labour; no required 'deposits' - financial or otherwise; no withholding salary, benefits, property or documents to force personnel to continue work; personnel right to leave premises after workday; personnel free to terminate their employment; and no use nor support for human trafficking.

c) **Health and Safety**: Provide a safe and healthy workplace; prevent potential occupational accidents; appoint senior manager to ensure OSH; instruction on OSH for all personnel; system to detect, avoid, respond to risks; record all accidents; provide personal protection equipment and medical attention in event of work-related injury; remove, reduce risks to new and expectant mothers; hygiene- toilet, potable water, sanitary food storage; decent dormitories- clean, safe, meet basic needs; and worker right to remove from imminent danger.

(...)

European Commission

Option B (optional)

Proposed new criterion (second proposal, Option B)
Labour conditions during manufacturing (optional)

(…)

d) **Freedom of Association and Right to Collective Bargaining**: Respect the right to form and join trade unions and bargain collectively. All personnel are free to: organize trade unions of their choice; and bargain collectively with their employer. A company shall: respect right to organize unions & bargain collectively; not interfere in workers' organizations or collective bargaining; inform personnel of these rights & freedom from retaliation; where law restricts rights, allow workers freely elect representatives; ensure no discrimination against personnel engaged in worker organizations; and ensure representatives access to workers at the workplace.

e) **Discrimination**: No discrimination based on race, national or social origin, caste, birth, religion, disability, gender, sexual orientation, union membership, political opinions and age. No discrimination in hiring, remuneration, access to training, promotion, termination, and retirement. No interference with exercise of personnel tenets or practices; prohibition of threatening, abusive, exploitative, coercive behaviour at workplace or company facilities; no pregnancy or virginity tests under any circumstances.

f) **Disciplinary Practices**: Treat all personnel with dignity and respect; zero tolerance of corporal punishment, mental or physical abuse of personnel; no harsh or inhumane treatment.

(…)

Joint Research Centre

European Commission

Option B (optional)

Proposed new criterion (second proposal, Option B)
Labour conditions during manufacturing (optional)

(…)

g) **Working Hours**: Compliance with laws & industry standards; normal work-week, not including overtime, shall not exceed 48 hours; 1 day off following every 6 consecutive work days, with some exceptions; overtime voluntary, not regular, not > 12 h/w; required overtime only if negotiated in CBA.

h) **Remuneration**: Respect right of personnel to living wage; all workers paid at least legal minimum wage; wages sufficient to meet basic needs & provide discretionary income; deductions not for disciplinary purposes, with some exceptions; wages and benefits clearly communicated to workers; paid in convenient manner – cash or check form; overtime paid at premium rate; prohibited use of labour-only contracting, short-term contracts, false apprenticeship schemes to avoid legal obligations to personnel.

i) **Management Systems**: Facilities seeking to gain and maintain certification must go beyond simple compliance to integrate the standard into their management systems & practices.

(…)

European Commission

Option B (optional)

Proposed new criterion (second proposal, Option B)
Labour conditions during manufacturing (optional)

(…)

Assessment and verification:

The applicant shall declare compliance with these requirements to the Competent Body providing the copies of the certificates of Accredited Certification Bodies (CBs) accredited by Social Accountability Accreditation Services (SAAS) showing the compliance with the above requirements in more than 90% of the first-tier suppliers (final product assembly).

Additionally, the applicant shall provide to the Competent Body

- A list of first-tier suppliers representing at least 90% of procurement expenditure for final product assembly of computers.
- The independent social audit reports to verify that he is fulfilling its obligations according to this mandate.

Additionally, the applicant shall publish the independent social audit reports of the first-tier suppliers online to provide evidence to interested consumers.

European Commission

Criterion 5.2 – Use of 'conflict-free minerals

Proposed new criterion
'Conflict-free minerals' in electronics The applicant shall support the responsible sourcing of "conflict-free minerals" from the African Great Lakes Region for use in their computer products. *Assessment and verification*: The applicant shall declare the compliance with these requirements and shall provide additionally a description of the way he engages in responsible sourcing projects in the African Great Lakes Region (e.g. membership in a voluntary industry initiative, e.g. the Public Private Alliance, the Conflict-Free Tin Initiative or the Solutions for Hope Project) to the competent body.

European Commission

Stakeholder feedback Further research and evidence

- Inclusion of criteria on critical raw materials was generally supported.
- Criteria should have clearer definitions ("responsible sourcing", conflict-minerals).
- Verification was felt to be challenging.

European Commission

Proposed new criterion (second proposal)
'Conflict-free minerals' in electronics The applicant shall support the responsible sourcing of "conflict-free minerals" from the African Great Lakes Region. In this context, the material scope encompasses tin, tantalum, tungsten and their ores and gold. *Assessment and verification*: The applicant shall declare the compliance with these requirements and shall provide additionally a description of the way he engages in responsible sourcing projects in the African Great Lakes Region for at least one of the above listed conflict minerals to the Competent Body. As responsible sourcing projects, all activities carried out within the Democratic Republic of the Congo that aim to source minerals in accordance with the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* are eligible (e.g. the Public Private Alliance for Responsible Minerals Trade, the Conflict-Free Tin Initiative, and the Solutions for Hope Project).

- The scope is further specified (tin, tantalum, tungsten and gold).
- It is specified that applicants have to engage in activities that address at least one of the above listed materials.
- The definition of 'responsible sourcing projects' was further specified and encompasses projects carried out within the Democratic Republic of the Congo

EU Ecolabel. Questions to discuss or to comment in written form

1.

9. Cluster 6: Further criteria – presentation and discussion

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised EU Ecolabel and GPP criteria proposals.

9.a Cluster 6: Further criteria – presentation and discussion

Ecolabel

1. Criterion 6.1 – Ergonomics
2. Criterion 6.2 – Emission of fluorinated GHG during LCD production

Criterion 6.1 – Ergonomics

Consultation questions
• Should the EU ecolabel for electronic displays, especially for the external computer displays, include criteria for (visuable and/or workload) ergonomics, e.g. aligning them to the TCO criteria?

Stakeholder feedback

- Ergonomics criteria can be introduced but if an impulse should be given to this EU Ecolabel product group, it is proposed not to align too much to other private labels which are more known and widespread than the Ecolabel in this sector and that could, at the end, be preferred by the applicants instead of the Ecolabel just because being better known on the market and maybe because they require less number of criteria to comply with.

Further research and evidence

The label TCO Certified Displays 6.0 defines a range of requirements for visual and workload ergonomics:

Visual ergonomics		Workload ergonomics
Image detail characteristics	• Native display resolution requirement	Vertical tilt
Luminance characteristics	• Luminance level • Luminance uniformity • Black level • Luminance uniformity – angular dependence • Greyscale gamma curve	Vertical height
Luminance contrast characters	• Luminance contrast – characters • Luminance contrast – angular dependence	
Reflection characteristics	• Front frame gloss	
Screen colour characteristics	• Correlated colour temperature, CCT, variation • Colour uniformity • RGB settings • Colour uniformity – angular dependence • Colour greyscale linearity	

Further research and evidence

The Blue Angel for Computer Monitors includes the following criterion regarding ergonomics:

The ergonomic properties of flat-panel monitors for personal computers shall be tested according to DIN EN ISO 9241-307 and at least meet the requirements of pixel error class 2. This requirement shall be considered met if the product is certified under TCO Certified Displays 5.2.

Submission of the test protocol prepared by an independent testing laboratory accredited under DIN EN ISO/IEC 17025. Alternatively, the applicant shall provide evidence (Annex 3) that the product has been certified under TCO Certified Displays 5.2.

Further research and evidence

.

The ECMA-370 standard, specifying environmental attributes and measurement methods for ICT and CE products, defines an ergonomics criterion for computer products:

For computing products it shall be declared if the monitor/display meets the ergonomic requirements of ISO 9241-307.

Further research and evidence- Pixel error class

- TFT monitors are made up of a set number of pixels. The monitor can be working at 100% however can consist of pixels or sub-pixels which are either:
- a) Permanently dark or light which is not always evident, OR
- b) A constant flash which is more noticeable.

The standard ISO 9241-307 Class II defines the LCD specific ergonomics standards. One of the quality criteria of the ISO standard is the pixel error tolerance.

Maximal permissible number and kind of pixel faults per 1 million pixel.

Pixel defect category	**The number of pixel defects is defined per 1 million pixel.**		
	Defect Typ 1 (constantly bright pixel)	Defect Typ 2 (constantly dark pixel)	Defect Typ 3 (defect subpixel, either constantly bright red, green, blue or constantly dark)
I	0	0	0
II	2	2	5
III	5	15	50
IV	50	150	500

Proposed new criterion (first proposal)
'Ergonomics' The ergonomic properties of electronic displays shall be tested according to EN ISO 9241-307 and at least meet the requirements of pixel error class 2. *Assessment and verification* The applicant shall evidence compliance with the ergonomics requirements by submission of the test protocol prepared by a testing laboratory accredited under EN ISO/IEC 17025.

Following stakeholder feedback, it is proposed **not** to align the total ergonomics requirements of the label TCO Certified Displays to the EU Ecolabel criteria as this is a well-established label on the market especially known for ergonomics of display products.
Thus, it is proposed to set a minimum quality criterion on the pixel error class as defect pixels might lead to shorter lifetime of the overall display product.

EU Ecolabel. Questions – comments on ergonomics

Criterion 6.2 – Emission of fluorinated GHG during LCD production

Proposed new criterion (first proposal)
Fluorinated GHG emission during LCD production Electronic displays with integrated LCD panel must be produced in a way that the fluorinated greenhouse gases NF_3 and SF_6, if part of the production process, are abated by a system that is an integrated part of the production process. *Assessment and verification*: The applicant shall declare the compliance with these requirements and shall additionally provide a description of the implementation process at suppliers/sub-contractors (i.e. LCD panel makers) to the competent body.

Stakeholder feedback

- Support the inclusion of such a criterion. Verify the feasibility in order to prevent that no one could apply for Ecolabel Criteria with too stringent or too ambitious criteria.

- Manufacturers arguing that they cannot interfere with suppliers' manufacturing processes that do not have direct impacts on the parts they supply to manufactures. However they could encourage them to address the F-gas abatement issue as part of their environmental management. General information requirement rather than a prescriptive requirement.

Further research and evidence

- Further technical information was required from manufacturers of electronic displays and their LCD panel suppliers by a short questionnaire.

- Feedback was given that the manufacturer of a television is not a manufacturer of flat panel displays.

- There is a limitation in TV manufacturers requiring display manufacturers to implement certain Fluorinated GHG (F-gas) abatement programs.

- It is seen as possible from manufacturer's view to encourage/support their display suppliers to address the F-gas abatement issue as part of their environmental management.

- Further, there might be a confidentiality issue relating to actual F-gas abatement programs implemented by display manufacturers.

Further research and evidence

Following efforts are known for improving the emissions from flat panel display manufacturing:

- Participation in WLICC (Word LCD Industry Cooperation Committee) with Korean, Japanese, Chinese and Taiwanese LCD manufacturers companies making several efforts to reduce F-gas emission voluntarily.

Generally, LCD panel manufacturers have used the following F-Gases:

- NF_3, being used in chamber cleaning of the deposition process;
- SF_6, being used in LCD surface treatment of dry etching process;
- CF_4 and c-C_4F_8, being used for OLED Panel manufacturing.

A consideration could be changing SF_6 to NF_3, since the last has a lower GWP (GWP - SF_6: 23,900, NF_3: 17,200).

In theory there is the possibility that F_2 and COF_2 may replace NF_3, but in practice these two gases have been

scarcely used.

Proposed new criterion (second proposal)

Fluorinated GHG emission during LCD production

The applicant shall encourage their display suppliers to abate fluorinated greenhouse gases NF_3 and SF_6, if part of the production process, by a system that is an integrated part of the production process.

For this reason, the applicant shall gather following information from their display suppliers:

(a) Description of goals in place and steps taken to reduce F-GHG emissions, for example process optimization, use of alternative chemistries, capture / recycling, and / or abatement technologies.

(b) Specification which of the used F-GHGs (i.e. SF_6, NF_3, PFCs, and HFCs) are being reduced.

(c) Information if the supplier participates in any national or international consensus-based or voluntary efforts to reduce F-GHG emissions from flat panel display manufacturing.

(d) Information about the methods applied to estimate aggregate annual F-GHG emissions

(e) Estimated annual F-GHG emissions intensity (if possible, in kg CO_{2e} per m^2 of flat panel displays (array glass) produced) across manufacturing fabs for the most recent year.

(f) Indication of the destruction or removal efficiencies (DREs) of the installed abatement systems for each of the F-GHGs used.

Assessment and verification: The applicant shall declare the compliance with these requirements and shall additionally provide the information sheets of their display suppliers to the Competent Body.

EU Ecolabel. Questions – comments on Fluorinated GHG emmissions

1. it could be discussed if this criterion should be moved to Cluster 3 on Lifetime extension criteria.
2.

9.b Cluster 6: Further criteria – presentation and discussion

GPP IT Equipment

Following stakeholder feedback, for EU Ecolabel it is proposed not to introduce a new ergonomics requirements aligned with the label TCO Certified Displays. However, stakeholder feedback is sought on whether a selection of sub-criteria from either the TCO Certified Displays criteria set or EN ISO 9241-307 would be appropriate for GPP.

Consultation questions

- Are ergonomics criteria set in the public procurement of Office IT Equipment?
- If so, what are the main criteria are what criteria or test methods are referred to?
- Of the criteria in TCO or ISO 9241-307 which would be the most relevant to specifying a high quality, ergonomic display or keyboard?

10. Cluster 7: Information – presentation and discussion

Summary of stakeholder feedback, follow-up evidence collection and analysis, revised criteria proposals.

1. Criterion 7.1 – User instructions
2. Criterion 7.2 – Information appearing on the Ecolabel

Criterion 7.1 – User instructions

Proposed revised criteria (first proposal)

The television and external computer display shall be sold with relevant user information that provides advice on its proper environmental use. The information shall be located in a single, easy-to-find place in the user instructions as well as on the manufacturer's website. The information will include in particular:

(a) The power consumption of the product in the various modes, expressed in Watts:

  (i) Televisions / external computer displays: on, off, passive standby;

  (ii) Televisions: quick start mode; active standby (low) for networked television sets.

(b) Televisions: The average annual energy consumption expressed in kWh, calculated on the basis of the on-mode power consumption, operating 4 hours a day and 365 days a year.

(c) Information that energy efficiency cuts energy consumption and thus saves money by reducing electricity bills.

(d) The following indications on how to reduce power consumption:

  (i) Information on the product's settings that facilitate energy savings in different modes;

  (ii) Turning the product off at its mains supply, un-plugging it, or using the hard off-switch (where one is fitted) will cut energy use to (near) zero;

  (iii) Putting the product into standby mode will reduce energy consumption, but will still draw some power;

  (iv) Increasing the brightness of the screen will increase energy use; using manual and/or automatic brightness control (ABC) facilitates energy savings;

  (v) External computer displays:

    - Note that screen savers can stop displays from powering down into a lower power mode when not in use. Ensuring that screen savers are not activated on displays can therefore reduce energy use;

(…)

Criterion 7.1 – User instructions

Proposed revised criteria (first proposal)

(…)

(vi) Televisions:

- Note that the Quick Start Function causes increased power consumption;
- Note that integrated functions, such as a receiver for digital signals (e.g. DVB-T) or hard disk recorders may help reducing power consumption if, as a result, an external device becomes redundant.

(a) The position of the hard off-switch (where one is fitted).

(b) Information that extension of the product's lifetime reduces the overall environmental impacts.

(c) The following indications on how to prolong the lifetime of the product:

(i) Clear instructions in form of a repair manual to enable replacing of key components for upgrades or repair.

(ii) A list of available spare parts with current prices.

(iii) Information to let the user know where to go to obtain professional repairs and servicing of the product, including contact details as appropriate;

(d) End-of-life instructions for the proper disposal of the product at civic amenity sites or through retailer take-back schemes as applicable, which shall comply with Directive 2012/19/EU of the European Parliament and of the Council.

(e) Information that the product has been awarded the EU Ecolabel with a brief explanation as to what this means together with an indication that more information on the Ecolabel can be found at the website address http://www.ecolabel.eu

(f) Any instruction/repair manual(s) should contain recycled content and should not contain chlorine bleached paper.

Assessment and verification: the applicants shall declare the compliance of the product with these requirements to the competent body.

Proposed revised criteria (second proposal)

The electronic display shall be sold with relevant user information that provides advice on its proper environmental use. The information shall be located in a single, easy-to-find place in the user instructions as well as on the manufacturer's website. The information shall include in particular:

(a) Energy consumption:

- (i) The maximum power demand in each operating mode, expressed in Watts.
- (ii) Instructions must be provided on how to use the device's energy saving mode (e.g. Automatic Power Down).
- (iii) The annual energy consumption in kWh per year, based on the power demand of the electronic display operating 4 hours per day for 365 days. Additional note that the actual energy consumption will depend on how the display is used.

(b) Information that energy efficiency cuts energy consumption and thus saves money by reducing electricity bills;

(c) The following indications on how to reduce power consumption:

- (i) Turning the product off at its mains supply, un-plugging it, or using the hard off-switch (where one is fitted) will cut energy use to (near) zero;
- (ii) Putting the product into standby mode will reduce energy consumption, but will still draw some power;
- (iii) Reducing the brightness of the screen will reduce energy use; using manual and/or automatic brightness control (ABC) facilitates energy savings;
- (iv) External computer displays: Note that screen savers can stop displays from powering down into a lower power mode when not in use. Ensuring that screen savers are not activated on displays can therefore reduce energy use;
- (v) Televisions:
  - Note that a Quick Start Function might cause increased power consumption;
  - Note that integrated functions, such as a receiver for digital signals (e.g. DVB-T) or hard disk recorders may help reducing power consumption if, as a result, an external device becomes redundant.

(d) (…)

Proposed revised criteria (second proposal)

(…)

d) Network connectivity (if applicable): Information on how to deactivate networking functions

e) The position of the hard off-switch (where one is fitted).

f) Information that extension of the product's lifetime reduces the overall environmental impacts.

g) The following indications on how to prolong the lifetime of the product:

  a) Clear disassembly and repair to enable a non-destructive disassembly of products for the purpose of replacing key components or parts for repairs.

  b) Information to let the user know where to go to obtain professional repairs and servicing of the product, including contact details as appropriate; service should not be limited exclusively to applicant's Authorized Service Providers.

h) End-of-life instructions for the proper disposal of the product at civic amenity sites or through retailer take-back schemes as applicable, which shall comply with Directive 2012/19/EU of the European Parliament and of the Council.

i) Information that the product has been awarded the EU Ecolabel with a brief explanation as to what this means together with an indication that more information on the Ecolabel can be found at the website address http://www.ecolabel.eu

j) Any print-versions of instruction/repair manual(s) should contain recycled content and should not contain chlorine bleached paper. To save resources, online versions should be preferred.

Assessment and verification: The applicants shall declare the compliance of the product with these requirements to the competent body and shall provide a link to the online-version or a copy of the user instructions / repair manual to the Competent Body.

Criterion 7.2 – Information appearing on the Ecolabel

Proposed revised criterion (first proposal)
Optional label with text box shall contain the following text: '- high energy efficiency - mercury-free backlights - designed to facilitate extended lifetime - designed to facilitate recycling.' *Assessment and verification*: the applicant shall declare the compliance of the product with this requirement, and shall provide a copy of the Ecolabel as it will appear on the packaging and/or product and/or accompanying documentation to the competent body.

Proposed revised criterion (second proposal)
The optional label with text box shall contain the following texts: - high energy efficiency - mercury-free backlights (if the product contains an LED display) - designed to facilitate longer lifetime - designed to facilitate recycling - contains xy% post-consumer recyclates (only when being higher than 25%) The guidelines for the use of the optional label with text box can be found in the "Guidelines for use of the Ecolabel logo" on the website: http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf *Assessment and verification*: The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

EU Ecolabel. Questions-commentsInformation appearing on the Ecolabel

12. Concluding discussion and next steps and close of the workshop

Thanks for your attention

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Next steps?
Following on from this AHWG meeting

- **Draft minutes** will be circulated
  - Please check them for accuracy, we will give a deadline
- Deadline for **hazardous substance derogation requests**
  - Submit using form by Friday 13th June 2014
  - Sub-group will meet over summer
- Deadlines for **written comments**:
  - **Ecolabel criteria: Friday 4th July 2014**
  - **GPP criteria: Friday 13th June 2014**

Voting is proposed for March 2015 EUEB and Regulatory Committee

Joint Research Centre