Position paper on the EC proposal for an Energy Label on displays & amendments to the Ecodesign draft submitted to the WTO

July 2017

Following the Ecodesign Consultation Forum meeting organised on 6 July 2017, we put forward our views below.

Political delays

The proposal to group the display measure with the adoption of several Ecodesign & Energy Labelling measures will substantially delay the implementation date in addition to the extensive delays already experienced. We disagree with this approach, especially considering the Commission's limited resources to ensure the effective delivery of such a "package". Packaging is unrealistic in terms of timing, and will severely limit the impact the display measure will have on the market. Packaging has also been opposed by the European Council and Parliament[1]. Should new delays occur, we demand that the level of ambition is maintained through the necessary adaptation of the requirements.

We would like to remind here that the revision of the existing regulations on televisions has been repeatedly designated as a priority which should be addressed with ambition, notably in the Circular Economy Action Plan (Dec 2015), in the Environmental Council call to unleash the potentials of Ecodesign for Circular Economy (June 2016), and again in the communication on the new Ecodesign Work Plan (Nov 2016). The rules in place for televisions, which make up a substantial part of the electronic display product category, have been assessed twice as lacking the necessary stringency to challenge 'business as usual' development, in the CSES evaluation of Ecodesign[2] in 2012, and in the Ecofys evaluation of the policy in 2014. The fast evolution of the technology has required several data updates to respond to a revision process which started in 2012 already.

⇨ **Therefore, we call on the Commission to:**

- **take all steps necessary for a swift adoption of the measure, to respect the previously proposed timeline (2018 implementation) and to renounce the packaging approach**
- **to make sure that the Ecodesign and Energy Labelling measures will not be 'running after the market', but instead be challenging it with appropriate levels of stringency that anticipate new technologies becoming mainstream in years to come.**

[1] In April 2016, Member States expressed their concern over the idea of "packaging" Ecodesign and Energy Labelling policies. The Parliament inserted a provision in the new Labelling regulation that the Commission should publish measures as soon as they are "ready" (and not wait on other measures to be finalised).

[2] Centre for Strategy & Evaluation Services – Evaluation of the Ecodesign Directive, March 2012

Scope

There are substantial issues with the proposed scope that must be resolved, in particular with regards to product types for which an exemption from requirements is proposed:

Signage displays

Identified in the Working Plan 2016-2019 as a product worth being investigated, the Commission committed to have the regulation of this product group "taken up in the ongoing work on the revision of the existing implementing Ecodesign measures for televisions". However, the energy efficiency of signage displays is currently not covered in the proposals. Therefore, we call on the Commission to as soon as possible honour the pledge made in the 6 July Consultation Forum to launch a separate preparatory study on this product group as part of the Ecodesign Working Plan 2016-2019.

An ongoing study on signage displays by Topten shows that there is no uniformity in the reporting of energy consumption among signage displays. The lack of information is very confusing for consumers. Information requirements on energy consumption (for at least those signage displays currently covered by the ENERGY STAR label) would facilitate the comparison of devices with one another, and provide initial information for the upcoming preparatory study.

Moreover, we have concerns that the definitions put forward in in the proposed regulations are inconsistent, and insufficient to prevent TVs and/or monitors currently on the market to be categorised as signage displays, to be gaining exemption from the regulation. To prevent the creation of a loophole, we recommend revising this definition to ensure that it cannot be met by normal displays. If such a definition cannot be found, it is clear that signage displays are too similar to normal displays to justify their exemption.

Integrated displays

In terms of the end-of-life processing of displays, there is little difference between an integrated display and a standalone display. Both types of displays should be included within scope of the material efficiency requirements of the Ecodesign regulation. We strongly disagree with the option to tackle this issue on a product by product basis.

Digital photo frames (DPFs)

There is no technical reason why DPFs should not comply with the energy and resource efficiency requirements of the regulations. The current definition depends on DPFs being "conceived to display exclusively still visual information". This means that digital photo frames that display video as well as static images are considered to be within the scope already.

Professional, broadcast and security displays

There are many aspects of the definitions of professional, broadcast and security displays that could be met by standard TVs and monitors, especially in the future with the advancement of TV technology. To prevent potential loopholes, it is necessary to revise these definitions to future-proof them.

⇨ **We call on the Commission to:**

- **launch a preparatory study on signage displays as soon as possible**
- **to include information requirements for the energy consumption of signage displays**

- **to revise the proposed definitions of signage, professional, broadcast and security displays and digital photo frames to ensure consistency to prevent loopholes**
- **to cover integrated displays with material efficiency requirements (in the current horizontal measure) and digital photo frames with both material and energy efficiency requirements.**

Energy efficiency

1) Safeguarding key provisions

We strongly support the following aspects of the Energy Label proposal and call on the Commission to safeguard these:

- The goal behind the current proposals to have **empty A & B classes when the label enters into force.** In the event of any delay to implementation, the level of stringency should be tightened to ensure this remains the case.
- **The inclusion of UHD allowance on the label:** The label should differentiate the most efficient TVs regardless of resolution, raising consumer awareness of high running costs of UHD on some models.
- The consideration given to the **High Dynamic Range (HDR)** feature: As HDR prevalence will increase rapidly and HDR technology can have a sizable impact on energy consumption, we believe consumers must be informed of the impact his technology can have on the energy consumption of their television. By giving visibility to the gap in performance of HDR and normal operation, we create an incentive for manufacturers to make HDR more efficient. This is why we prefer the option to have an additional HDR scale on the label over the option to integrate the consumption linked to this feature in the formula, although the latter could be seen as a compromise. Moreover, if HDR content is available on an enabled TV, it will automatically be the default mode. We invite the Commission to foresee the obligation to have the option to turn it off.
- The proposed **monitor ambition:** the requirements placed on monitors are considered achievable, with potential for improved ambition. Whilst a small subset of high-specification curved monitors intended for gaming purposes may face challenges to comply with the requirements, data shows that today some of these products can already reach Tier 2 MEPS (See Topten data in Annex 1).
- The introduction of a 0.3W power requirement on devices with an activated quick start function. We invite the Commission to tackle the rest of our comments on **standby**[3].
- The presence of a **QR code** on the label, which we see as an opportunity to access additional information. This digital feature has been explicitly referred to in the revised Energy Labelling regulation (recital 30 and article 16) and will help consumers get more comprehensive information on the specificities of the model, either through the database or, before it is fully operational, through supplier websites. This would notably help develop applications that provide further guidance on the most suitable model for each consumer, and give energy bill estimations on the local energy price, something a harmonised EU label cannot deliver.

[3] Position on the draft Ecodesign requirements for electronic displays - Version notified to the WTO in December 2016, March 2017

2) Greater EEI Ambition

Based on an analysis of the current displays on the market and the expected improvements in technology, we consider the ambition of the proposed EEI formula (applying to both Ecodesign and the Label) insufficient.

- **TV ambition:** May-June 2017 CLASP analysis of a product database of TVs including the assessment of MEPS levels and labelling classes shows that the level of ambition proposed will be insufficient, especially in the event of delays. Historical efficiency improvements of around 7% per year are expected to continue over the next five years, due to:
    - QLED direct emissive TVs expected to become mainstream within four years and promise 30-50% improvement in efficiency
    - LED lighting improvements in efficacy, colour stability and accuracy
    - Improvements in backlit technology (more efficient control of backlit zones)
    - Advancements in performance and efficiency of processors (following Moore's law)

  It is important to note that the CLASP analysis does not include Automatic Brightness Control (ABC) and motion detection allowances, meaning pass rates will be even higher in reality. ABC could be included in around 50% of the EU market.
- **Large screen ambition:** The equations/thresholds proposed by the Commission are less stringent on larger screens than those of the ENERGY STAR. A similar gradient to ENERGY STAR would ensure that the increased total energy consumption of larger screens is curbed to some degree by improved efficiency. This is particularly important as larger TVs are becoming more affordable[4].

⇨ We request that the Commission revises the equations for the EEI thresholds with the aim to exclude 25-30% of the market, accounting for a 7% pa improvement rate in energy efficiency to the date of each implementation (accounting for any delays), and to ensure that the average power flattens with larger displays in line with the ENERGY STAR gradient.

3) Weaknesses

The following provisions must be improved:

- **Compliance with the revised Energy Labelling Framework Regulation:** To be consistent with the new Energy Labelling Framework Regulation, a number of changes (listed in Annex 2) are necessary. Most importantly, the annual energy consumption should be shown on the label[5].

- **Software updates which impact energy class during use:** Internet-connected televisions are becoming common, but the current test standard insufficiently accounts for this. Televisions are tested in the 'out of the box' mode (i.e. as shipped) without internet connection. Once connected however, the television may ask for permission to download and install any software. The updated settings could adversely impact energy consumption, and presents a substantial loophole which

[4] 55-inch screens are the most popular in Europe, and prices of 65- to 75-inch models are coming down, making them affordable more consumers. http://www.consumerreports.org/lcd-led-oled-tvs/5-tv-trends-to-follow-in-2017

[5] There should be no issue with the provision a kWh figure as long as it is based upon realistic, clearly defined assumptions that are consistent for both monitors and televisions.

needs to be closed. In the STEP report[6], a significant increase in energy consumption of 31% to 37% was observed for three of the seven television models tested. As software updates occur frequently, small incremental increases of energy consumption may in the long run lead to a much higher energy consumption. Consumers are unlikely to refuse a required software update due to concerns about energy consumption increase, even if they are informed about them. The revised Energy Labelling Framework Regulation mentions the need for consumer information and prior consent before any software update, at least during a time period proportionate to the average life-time of the product (recital 24 and art 4). There is no provision preventing Market Surveillance authorities testing the display after a software update if that is relevant. Requiring testing of displays with the latest available software update will ensure that manufacturers pay attention to the energy implications of their proposed updates. Without such motivation, they may neglect the impacts of software updates when trying to improve functionality of the display, and ultimately leading to discrepancy between the energy performance displayed on the label and real consumption.

- **Label icons:** We have doubts regarding the proposed External Power Supplies (EPS), Automatic Brightness Control (ABC) and motion detection icons in terms of comprehensibility and influence on purchasing decisions. ABC and motion detection are already incentivised via allowances and there is a risk of creating a negative incentive on EPS whereby manufacturers who would otherwise ship without a standardised EPS could be encouraged to ship with one for the logo not to be greyed on the Energy Label.
  We propose that the Commission replace the current icons with the following material efficiency aspects, and assess these in their consumer understanding study:
  - Compatibility with USB-C power (icon): of interest to consumers in their purchasing decisions, and has material and energy efficiency benefits.
  - Spare parts availability (icon + # years): a reasonable proxy for product lifetime. It is relevant to consumers in the absence of standards to communicate product durability. Information on spare parts can improve product reparability and be very useful to third parties.
  - Coverage of durability (anticipated lifetime of products in years), reparability or service index and free warranty period with full burden of proof on supplier. If it is considered unfeasible to include these elements on the label, the information should be accessible by consumers and market surveillance authorities through a QR code, linking to the information stored on the future database and in the meantime on supplier's website.

- **Automatic Brightness Control (ABC):** We support the incentive of a 10% reduction in the EEI. This is an appropriate incentive level considering the variation in ABC performance over different lighting levels. However, if the control curve for ABC is insufficiently described, savings related to this functionality may not be realised as some poor ABC implementations only activate in relatively dark conditions. If the ABC feature is reflected through a bonus in the EEI under certain conditions with regard the control curve, we question the need to have the ABC feature displayed on the label.

[6] "Closing The 'Reality Gap' – Ensuring A Fair Energy Label For Consumers", June 2017

- **Energy saving features:** Wording in the current draft regulation only partially addresses the need to ensure that users are informed of the energy impact of a change in picture settings, as it only applies to TVs delivered with a forced menu. As identified in the STEP report, issues relating to energy saving features include the:
    - Impact of picture setting changes on energy saving features: It was found that five out of the seven televisions tested for the STEP project disable energy savings features when changing from the default picture setting.
    - Prevention of reactivation of energy saving functionality: In two cases, energy saving features were deactivated/greyed-out. Re-enabling was not possible without a factory reset.
    - Lack of information for user on the energy consumption impact of disabling energy saving settings: In all five cases, the user was not informed of the energy saving feature being disabled, nor the impact this selection has on energy consumption.

⇨ We call on the Commission to:

- **Make sure that the proposed Displays Label complies with the new Energy Labelling Framework Regulation, notably by requiring the display of the annual energy consumption on the label (Annex 2)**
- **Requiring that Displays are tested with the latest available software – see our proposed updates to standards, market surveillance requirements and regulatory text in Annex 3**
- **Assess the suggested material efficiency icons in the label understanding survey currently being carried out**
- **Ensure savings across a wide range of lighting levels by defining a control curve for ABC (Annex 4)**
- **Refine the wording on picture settings (Annex 5).**

Material efficiency

1) Requirements on design for disassembly and dismantling

Ease of disassembly is essential for repair and extraction of reusable parts, dismantling is essential to optimise recycling. We strongly support the intention to facilitate disassembly and dismantling by ensuring easy access to key components, and the references that the WTO wording makes to the absence of 'welding' or 'gluing' as 'joining' or 'sealing' techniques for the specified components. Some TV designs currently on the market present a serious barrier to disassembly and dismantling due to the way the assemblies are glued together.

However, if specific references to the means of joining materials must be removed, we have proposed an alternative wording in Annex 6. Exemptions for reasons such as quality, user privacy, or functionality would make the requirement entirely ineffective, even if "well developed reasoning" is required on why exemptions have been applied[7]. The electronics industry has shown the ability to design higher

[7] In the event that an exemption on safety was permitted, manufacturers should be required to indicate to which safety standard they cannot comply to as a result of the requirement.

performing, more compact products within very short timescales. A requirement on disassembly and dismantling simply represents one more consideration within an already effective design process.

⇨ We urge the Commission to retain strong requirements on non-destructive disassembly and dismantling and not to include exemptions to this clause.

2) Plastic marking

We support the mandatory marking of plastics and additives according to the relevant ISO standards, particularly marking content including flame retardants. We recommend the Commission to further facilitate recycling by:

- Collaborating with recyclers to ensure marking is compatible with automatic recognition systems which allow detection and segregation of the plastic material
- Providing greater detail in the markings, and specifying a minimum purity for plastic types
- Promoting enforcement to boost recyclers trust in plastic markings
- Requiring manufacturers to provide information on flame retardant concentration (ppm) and more detailed information on liquid crystals
- Including a requirement that all plastic parts >100g can be disassembled and are made of single polymer or directly recyclable polymer blend (to limit the variety of materials used), as specified in the Voluntary Agreement for Imaging Equipment.[8]

⇨ We invite the Commission to consider the above listed options to further facilitate repair and recycling.

3) Mercury and Cadmium logos

We support the logos for mercury and cadmium content and invite the Commission to safeguard them.

4) Product durability

To facilitate improved product durability, it is possible to reference durability standards in a similar way to the EU Ecolabel.

⇨ A requirement should be included for compliance with certain levels of standard MIL-STD810G (or IEC 60068/60529) relating to shocks and other damages. Examples are available in the JRC technical report for the Ecolabel of computers (2015).

5) Repair and end of life documentation and information

The availability of information to support repair and disassembly of products is key for the shift to a circular economy. The current text in Annex IV is greatly improved, and in particular we support the information requirements on repair and end-of-life documentation and information. However, the criteria to register with the manufacturer for end-of-life information could prevent third party

[8] The additional requirement could be worded as follows:
"In addition to the requirements of 2.1, plastic parts heavier than 100 g, shall consist of one single polymer or a polymer blend, shall avoid the use of coatings and shall be designed in a way that the plastic content can be used for the production of high-quality durable products by applying available recycling techniques."

repairers and those involved in repair cafés from having access. Many existing restricted-access platforms currently do not grant access to independent repair centres.

The argument that making such documentation available causes issues in terms of Intelligent Property Rights (IPR) and competitiveness cannot be supported. Firstly, as such "IPR" is not protected**,** competitors can reverse-engineer products to obtain more information than could be learned from a repair guide. Secondly, some manufacturers already provide this information. Dell and HP have complete service manuals available for free online. Finally, manual disassembly is quite different from assembly IPR: the areas where disassembly information is necessary are where assembly means such as snap fits and glue are used, and disassembly requires a completely different method, the means of which are unclear.

⇨ We request that the statements on information availability (for general, technical and repair and end of life documentation) be refined to the following:

> *1. General information: available as printed documentation with the product and in free access websites or in a common database of manufacturers, their authorised representatives or importers.*
> *2. Technical information: available in free access websites or in a common database of manufacturers, their authorised representatives or importers.*
> *3. Repair and end-of-life documentation and information: available to third parties dealing with maintenance, repair, reuse and upgrading of displays upon registration and provided in websites and in a common database of manufacturers, their authorised representatives or importers.*

The information relevant for recyclers should be made publicly available or through established information platforms for handling Waste from Electric and Electronic Equipment (WEEE).

6) Prevention of firmware/software problems resulting in product failure

The 2016 UBA report on products obsolescence [9] highlighted that the main reason for televisions failing was due to firmware or software problems.

⇨ We propose therefore including the following wording in the regulation:

> *"Manufacturers shall ensure that electronic displays are equipped with an interface allowing the installation of firmware or software updates. Failure diagnosis data shall be available via this same interface."*

7) Standards

The material efficiency standards currently in development under mandate M/543 are intended to be horizontal and/or generic. For these standards to be applied to displays, a product-specific mandate is necessary. A product-specific mandate already exists in the form of M/477. This can be expanded to

[9] UBA report on products obsolescence: Einfluss der Nutzungsdauer von Produkten auf ihre Umweltwirkung, November 2016

cover material efficiency aspects to be addressed by the M/543 standards due to be delivered on time for the next review of the regulation:

⇨ We propose amending M/477 as follows:

- Scope: To require that standards on energy measurements are applicable to the full range of electronic displays.
- Method: To require that standards are representative and account for technology developments (HDR, UHD) and real-life usage[10].
- Software: To require that products are tested in 'out-of-the-box' mode with the latest software updates installed (see software section)
- ABC: To include a suitable luminance and ABC testing methodology in line with suggestions in the CLASP paper[11].
- Material efficiency: To require the production of standards for televisions to support the measurement and communication of recycled content, durability, repair including a repair index, reuse including a reusability index, and recycling.

END

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[10] "Closing The 'Reality Gap' – Ensuring A Fair Energy Label For Consumers", June 2017
[11] "Measurement of automatic brightness control in televisions – critical for effective policy-making", Scholand, Batton, Harrison, June 2017

Annexes

Annex 1 – Monitor performance

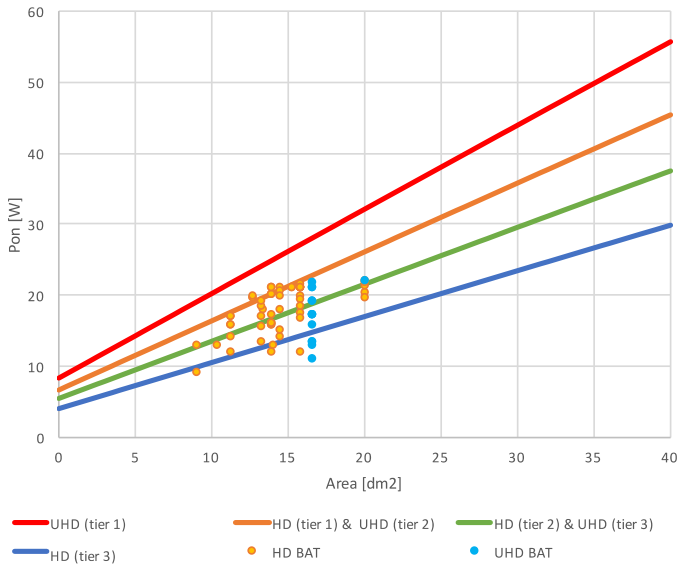

Figure 1: Best performing monitors reported on Topten.eu, Topten, July 2017

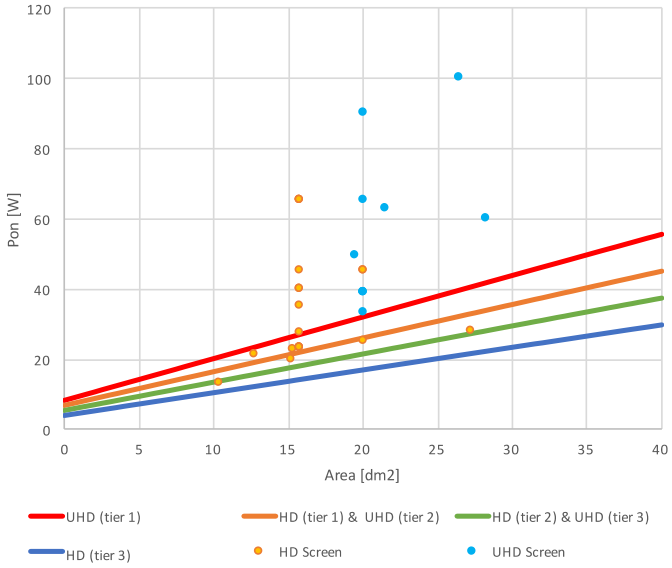

Figure 2: Selection of existing gaming monitors on the market, data gathered by Topten, July 2017

Annex 2 - Compliance with the revised Energy Labelling Framework Regulation

The following changes are necessary to the proposed label to comply with the Energy Labelling Framework Regulation:

- **Energy class range:** Point 3.1.(c) and 4(d) only refer to displaying the energy class, while the framework says: '*make reference to the energy efficiency class of the product and the range of the efficiency classes available on the label in any visual*'.

- **Shop relabelling:** In article 4 (dealer responsibilities), it is relevant to state that relabelling is mandatory and describe its implementation.
- **G/F class representation:** the text should provide 3 visual versions of the label with the relevant bottom classes in grey (article 11 point 10 revised Framework regulation).
- I**ndication of the annual energy consumption:** This is absent, which is a backward step to the previous label. The annual consumption should remain in a prominent position as specified in the revised Framework regulation.

Annex 3 - Software updates

To ensure against software updates causing unrepresentative increases in energy consumption, the following changes are recommended:

- **Testing standards:** Updates to specify testing of products with software updates in place.
- **Regulation:** Change Clause 7 of Annex II (using text adapted from the Blue Guide):

> *"Each single software or firmware update, unless intended exclusively for the purpose of correcting malfunctions and errors and not possibly increasing the energy use of the electronic display in any of the different modes, shall only be explicitly authorised by the user once the TV is switched on, even if the download and installation can be scheduled at a later moment. Software or firmware updates shall not modify a product already placed on the market in such a way that compliance with the applicable requirements or the energy labelling class are affected."*

- **Market surveillance:** Require in annex VI that market surveillance authorities download the very latest software updates prior to testing the product for compliance.

Annex 4 - ABC

The current draft requires that *"Pmeasured reduces by at least 20% when the ambient light illumination measured at the ABC sensor of the display product is reduced to 12 lux."* We suggest a refinement of this language to ensure that the ABC follows a control curve that has optimal savings across a wide range of lighting levels. Only ABC within a small percentage deviation compared to the ideal US DOE curve should be granted the extra power allowance:

> *"For products supplied with ABC enabled by default, $P_{measured}$ may be reduced by 10% in the calculation of the EEI provided that:*
> - *$P_{measured}$ is recorded with an ambient light illumination of 300 lux measured at the ABC sensor of the display product; and*
> - *$P_{measured}$ is recorded in a minimum of (TBC) increments light levels (L) from 12 to 300 lux, and the screen luminance measured in cd/m^2 is found to be no greater than ±5 % of the recommended luminance level characteristic, defined by the equation: = 95+165 /(1+EXP(-0,05*(L-75))) where L is the ambient light level measured at the ABC sensor of the display rang- ing from 12 to 300 lux; and*
> - *$P_{measured}$ reduces by at least 20% when the ambient light illumination measured at the ABC sensor of the display product is reduced to 12 lux."*

Annex 5 - Picture setting

ANNEX II Clause 4 should be edited as follows (note: corresponding updates will also need to be made to point 8 in Annex VI):

> *"4. REVERSIBILITY AND INFORMATION ON PICTURE SETTING AND MODE CHANGES FOR ELECTRONIC DISPLAYS*
> *From 1 July 2018:*
> *Electronic displays shall be placed on the market with the home mode/standard mode set by default. Electronic displays may be placed on the market with a menu on initial activation proposing alternative modes, such as a shop mode. The home/standard mode shall be the default choice in the forced menu. If the user selects a mode other than home mode, a warning message about the likely increase in energy use, shall be prompted and confirmation of the action requested.*
> *During use, in the event of the user making any changes in mode or picture setting that disable energy saving functionality, a warning message about the likely increase in energy use shall be prompted and confirmation of the action requested. It shall be possible to re-enable energy saving functionality without the need for a factory reset."*

Annex 6 - Alternative wording for disassembly/dismantling clause

> *"Manufacturers shall ensure that* ***electronic display design and construction, including any*** *joining or sealing techniques****, enables non-destructive disassembly and ease of dismantling[12] and avoids the permanent bonding of materials, so as to ensure the removability*** *of the following components when present:*
> - *batteries;*
> - *PCB assemblies larger than 0.1 dm2;*
> - *display panels larger than 1 dm2;*
> - *mercury containing components;*
> - *capacitors; and in addition;*
> - *PMMA boards;*
> - *internal power supplies.*
>
> ***Where gluing is used, it must be possible to separate the glued surfaces adhering the above components at temperature below 100°C. Access to*** *components shall be* ***ensured*** *by documenting the sequence of disassembly and dismantling operations needed to access the targeted components, including for each of these operations, the type and number of fastening technique(s) to be unlocked, and tool(s) required."*

[12] Definitions for ease of dismantling will be provided in the CEN/CENELEC standards being defined under mandate M/543.