

DIGITALEUROPE Comments on the Draft Ecodesign Regulation on Electronic Displays, Notified to the WTO on 21st of December 2016

Brussels, 3 February 2017

DIGITALEUROPE has strong reservations with the WTO notified draft display regulation, which we have also raised through the better regulation consultation process. Despite providing significant amount of data to the process, our comments have been largely disregarded, and, furthermore, new scope and requirements have been included in the proposal which were not subject to proper consultation or impact assessment. As a consequence, more than half of displays currently available cannot comply with the proposed technical requirements, a matter which will impact consumers significantly and be of high public concern. In this paper we will detail our concerns about scope, definitions, on-mode/standby requirements, resource efficiency and information requirements.

Executive summary:

This paper presents a detailed overview of DIGITALEUROPE's concerns with the draft display regulation. The first section of the paper considers the significant extension in scope compared with the previous regulation. Displays integrated into other products now also fall in scope of resource efficiency requirements and this extends the regulation to cover all kinds of other products including tablet computers, specialized displays, printers, medical equipment and home appliances. One of DIGITALEUROPE's key concerns is that an impact assessment on this extended scope has not been carried out. The requirements do not make sense for all of the products and there is an assumption that an integrated display can be treated the same as a stand-alone display, which is not always the case. DIGITALEUROPE proposes that all integrated displays are taken out of the scope of the regulation and managed through vertical regulations where required.

The paper then discusses the energy requirements. DIGITALEUROPE is concerned with the on-mode requirements as they can limit industry's ability to innovate and prevent state-of-the art technologies from being placed on the market. The requirements are also not aligned with global developments, as they will prevent some Energy Star certified models from accessing the European market. The Commission's analysis is based upon a CLASP (Collaborative Labeling and Appliance Standards Program) paper which in itself is based on incorrect assumptions. The CLASP paper is discussed in Annex 4 of this paper. The impact of the energy requirements is most significant for smaller sized monitors and very large televisions. There is also a concern with timelines which are not aligned with manufacturer design cycles. DIGITALEUROPE proposes a timeline and on-mode requirements in order to deal with some of the issues and proposes exemptions where significant technological advances are not expected or where market share is very small. In addition, the standby limits are considered unrealistic for the considerably larger and broader range of displays which now would suddenly fall into scope of the regulation. Over half of the models placed on the market in 2016 would not meet the proposed standby limit and consequently an adjustment is suggested.

DIGITALEUROPE has also made some comments on power management requirements; allowances/adjustments and software/firmware updates.

The fourth and fifth sections of this paper are concerned with the resource efficiency and information requirements proposed. The requirements also apply to integrated displays which may be complex to manage since it is not always clear what the boundaries of an ‘integrated display’ are and this impacts how requirements may apply (e.g. labelling). The regulation proposes to prohibit gluing and welding. DIGITALEUROPE is keen to ensure that innovation is not hampered and instead proposes that components are removable without the European Commission prescribing how manufacturers do this. Further, it is noted that standards currently under development would help to steer the setting of resource efficiency requirements and ensure that requirements are measurable and enforceable. The regulation also proposes significant information requirements on flame retardants, repair, dismantling and substances. Detailed substance information can be very difficult to source from suppliers and this would present a huge burden without analysis of benefits. It is suggested that certain information requirements are deleted since the environmental benefits are not clear.

1. Scope

The scope of the draft display regulation has suddenly become very broad, since it tries to cover all electronic displays including the ones integrated into other products. The differentiation in requirements is very confusing and not entirely logical as can be seen in the table below:

Requirement Types	Specific Energy Requirements	Resource Efficiency Requirements	Energy & Performance Information Requirements	Repair & EoL Information Requirements
Legal references	Annex II	Annex III	Annex IV 1 & 2	Annex IV 3
TVs (including hospitality TVs)	Yes	Yes	Yes	Yes
Computer Monitors/Displays ¹⁾	Yes	Yes	Yes	Yes
Digital Signage Displays	No ²⁾	Yes	Yes	Yes
Professional Displays (enhanced performance)	Only point 2 applies (standby)	Yes	No	Yes
Broadcast Displays	Only point 2 applies (standby)	Yes	No	Yes
Security Displays	Only point 2 applies (standby)	Yes	No	Yes
Digital Photo Frames	Only point 2 applies (standby)	Yes	No	Yes
Displays integrated into computers ³⁾	No	Yes	No	Yes
Displays integrated into medical equipment, including medical imaging displays	No	Yes	No	Yes
Displays integrated into laboratory equipment	No	Yes	No	Yes
Displays integrated into industrial machinery	No	Yes	No	Yes
Displays integrated into equipment for status display or control and function activation	No	Yes	No	Yes
Displays integrated into interactive whiteboards	No	Yes	No	Yes
Displays integrated into all-in-one video conference systems	No	Yes	No	Yes
Displays integrated into printing equipment	No	Yes	No	Yes
Displays smaller than 1 dm ² ⁴⁾	No	No	No	No
Displays in game consoles ⁴⁾	No	No	No	No
Displays in virtual reality headsets ⁴⁾	No	No	No	No
Projectors ⁴⁾	No	No	No	No

¹⁾ Computer Monitors other than Digital Signage Displays, Professional Displays, Broadcast Displays, Security Displays.

²⁾ Digital Signage Displays are in the scope of Lot 5, while having an exemption for specific energy requirements. So they are out of scope of the standby regulations (Lot 6, Lot 26) according to Article 4.

³⁾ Computers are not defined in this draft regulation, but most likely will follow the definitions provided in Lot 3 (desktop computers, integrated desktop computers, thin clients, and notebook computers with viewable diagonal screen size of 9 inch or longer including tablets and slates).

⁴⁾ The products excluded from this draft regulation will fall under Lot 6/26 as long as they meet the definition of household and office equipment.

One product group covered by a voluntary agreement under the Ecodesign Directive is excluded, but another product group covered by another voluntary agreement is not excluded. According to the way Article 1 is worded, all displays that do not fit into one of the categories mentioned in the scope definition under points 2-5 will be covered by both energy and non-energy requirements (e.g. displays in notebooks or tablets with diagonal under

9 inch, displays in GPS navigators with screen larger than 1dm², displays in portable DVD players, e-readers etc.). DIGITALEUROPE does not comprehend the reasoning behind this scope differentiation.

The key rationale behind the scope expansion proposed by this draft is that all displays regardless of their purposes (e.g. television, computer monitors, signage, professional displays, etc.) and their structure (e.g. stand alone or integrated into other products or structures) will be handled in the same way at the end of life and therefore common requirements for resource efficiency and repair/end-of-life information requirements can be set. However, expanding the scope of an implementing measure based on such a simple justification does not respect the guidelines set by the Ecodesign Directive and goes against the principles of “better regulations”.

Under the Ecodesign Directive (Art. 15 2a), any product regulated must represent a significant volume of sales and demonstrate significant improvement potentials in terms of its environmental impact. Nonetheless, a wide range of products that have small sales volumes will be included in the scope of this draft regulation, if they happen to integrate electronic display components bigger than 1 dm². Similarly, large and complex products where the display component plays a very minor part (e.g. core routers with display components) or specialized professional equipment (e.g. medical equipment with integrated display components) will be also included in the scope of the regulation despite the fact that the way these products are handled at the end of life and overall compliance management processes will be completely different from that of televisions or computer monitors.

The same Directive also specifies that the eco-design implementing measure should not set requirements that can entail excessive costs or compromise safety and functionality. This particular condition was not considered carefully when the Commission expanded the scope, since the proposed restriction of gluing and welding for displays in industrial machinery and laboratory equipment could introduce safety hazards and may negatively affect the functionality of many portable products with integrated electronic displays. The specific design aspects of these products have never been considered. For example, integrated displays are often designed as components of main products, and the design features are not always the same between stand-alone displays and those integrated into other larger products. In addition, such integrated components have been already covered under WEEE Directive together with the main products. In such situation, additional end-of-life requirements for components may cause serious confusion both in designing and monitoring the compliance.

The Ecodesign Directive also sets a procedural requirement that the Commission should conduct a scientific impact assessment prior to defining the scope and content of a regulation. According to First Vice President Timmermans, moreover, better regulation impact assessments shall not only take place in the beginning but also when the scope is amended. By including all displays over 1 dm² makes this draft a de facto horizontal regulation for resource efficiency and end-of-life information requirements thus requiring a new impact assessment. The JRC study on CCFL televisions is insufficient and completely inadequate as it does not cover other types of displays, not to mention displays integrated into a wide variety of other products. The costs vs benefits of setting resource efficiency and related information requirements for displays included in other types of products have never been studied.

DIGITALEUROPE believes that the scope of the draft display regulation and all requirements should be backed up by data, rather than being chosen randomly without prior assessment of the associated impacts. Thus, the scope of this draft regulation should be limited to televisions and computer monitors in principle, and should not cover products for which no scientific impact assessment has been carried out and/or which are covered by other Ecodesign implementing measures or voluntary agreements. We also ask the Commission to critically re-assess the relevance to apply the same resource efficiency and related information requirements to specialized display

products such as digital signage displays, professional displays, broadcasting and security monitors. Article 1 of the regulation should be modified according to the proposal below:

Article 1
Subject matter and scope

1. *This Regulation establishes ecodesign requirements for the placing on the market of electronic displays.*
2. *The requirements in Annex II and Annex IV point 2, shall not apply to:*
 - (a) Digital signage displays.*
 - (b) Large Conference Room displays.*
3. *The requirements in Annex II, points 1 and point 3 to point 7 and the requirements of Annex IV, points 1 and 2 shall not apply to:*
 - (a) Professional displays;*
 - (b) Broadcast displays;*
 - (c) Security displays;*
 - (d) Digital photo frames;*
 - (e) Gaming displays;*
4. *This Regulation shall not apply to:*
 - (a) Displays of a surface area smaller than or equal to 1 square decimeter;*
 - (b) Displays integrated into other products;*
 - (c) Medical imaging displays;*
 - (d) Virtual reality headsets; and*
 - (e) Projectors.*

2. Scope Related Definitions

In addition to the scope modification above, it is necessary to amend some of the definitions given in the draft regulation in order to capture the product range that should be distinguished from televisions and (non-professional) computer monitors. In Annex 1 we have put together a list of amendment proposals.

3. Energy Requirements

3.1 Unrealistic ambition level for on-mode limits

DIGITALEUROPE is concerned with the level of ambition of the on-mode requirements set by this draft regulation. With Ecodesign being a market access condition, such strict requirements can seriously limit the capacity of state-of-the-art technologies to come to market in Europe. The proposed requirements will prevent significant numbers of products from being sold on the EU market instead of removing the least efficient models while allowing a broad range of choices to consumers based on energy labels.

The stringency of the proposed Tiers comes as a complete surprise to the industry, and is clearly not in line with industry's expectations for technology development. We are disappointed to notice that in the development of

this new draft, the Commission appears to have used as technical support a CLASP (Collaborative Labeling and Appliance Standards Program) paper which uses inaccurate assumptions and employs a flawed methodology in an attempt to justify unreasonably stricter limits. DIGITALEUROPE’s position on the CLASP paper addressed the flaws and limitations in the employed reasoning and methodology, and can be found in Annex 4 to this document.

When applied to 2016 DIGITALEUROPE display database (consisting of compliance information for television and monitor models available on the EU market in 2016), the current Commission proposal will result in very high percentages of products being denied market access, as shown in the table (only monitors that are currently covered by the Lot 5 regulation have been taken into account in this analysis. Considering the expanded scope, the percentage of monitors failing the proposed requirements is expected to be much higher) below:

Type	Total	Tier 1		Tier 2		Tier 3	
		Fail	Pass	Fail	Pass	Fail	Pass
Displays up to HD	260	66 (25.4%)	194 (74.6%)	180 (69.2%)	80 (30.8%)	224 (86.2%)	36 (13.8%)
Displays above HD	322	113 (35.1%)	209 (64.9%)	222 (68.9%)	100 (31.1%)	289 (89.8%)	33 (10.2%)

It should also be pointed out that the Commission proposal takes a step back from the necessity of harmonizing display energy efficiency requirements at a global level. As soon as the first Tier will come into force, some display models that have been certified with ENERGY STAR in the US may not even be allowed access to the EU market. Considering that ENERGY STAR on-mode specifications are calculated in a significantly different manner, resulting in values up to 40% lower than those declared under the EU Ecodesign methodology, many of the certified models are likely to be denied EU market access.

The impact is most severe on smaller size computer monitors, gaming monitors, curved/touchscreen monitors, and large-size television sets. Currently there are very limited technical solutions to improve energy performance for these products. Thus, an overall adjustment of the EEI requirements and a range of on-mode allowances for certain displays facing additional challenges due to design/functionality are absolutely necessary to avoid major market disruptions.

Furthermore, the timeline proposed by the Commission does not allow sufficient time for manufacturers to reflect the upcoming requirements in their design cycle. As indicated in Recital 25 of the draft regulation, the time necessary to design/redesign a product should be taken into account when setting the timeline. The design of a display often goes through a long process, starting from the evaluation of requirements and a preliminary design, production and sourcing planning, until a detailed design is proposed. In later stages, the design is validated and tested in the different environments of use, and then fine-tuning of software and hardware is done before final production. Even when some of these stages take place simultaneously, the entire process, from conceptualization to production, usually lasts up to one year to be completed. Consequently, displays meant to be placed on the market during the year 2018 are already well advanced into the design and manufacturing process. In addition, the life of the product in the market (before it is sold) can last up to one and a half years.

This time needs to be considered as products currently under design will still need to be placed on the market long after July 2018. The short timeline proposed will have a significant impact on all displays manufacturers, who simply will not have enough time to incorporate the new requirements to the 2018 line-up.

Based on the current status of the adoption process, we estimate that industry will have to meet the Tier 1 requirements less than 12 months after publication. Specifically manufacturers of computer displays, which are covered for the first time by both Ecodesign and Energy Label regulations, will need significantly more time to meet these requirements. In order to ensure a smoother transition to the new regulation, industry would need at least 18 months after the regulation is published to fully incorporate the new requirements in product design/redesign.

To address the points mentioned above, DIGITALEUROPE proposes the following timeline and on-mode requirements:

Tier no. & Date	Resolution up to HD	Resolution above HD
Tier 1 – 1 January 2019	$EEl_{max} = 1.0$	$EEl_{max} = 1.3$
Tier 2 – 1 January 2021	$EEl_{max} = 0.85$	$EEl_{max} = 1.1$
Tier 3 – 1 January 2023	$EEl_{max} = 0.65$	$EEl_{max} = 0.85$

Specific allowances should be set for curved screen monitors, touchscreens and special size monitors (e.g. 21:9), which have additional challenges to reach higher energy efficiency. Considering that resolution has a significant impact on power consumption, it may be appropriate to differentiate the allowances based on screen resolution.

Tier 1 exemptions for on-mode requirements are still critical for OLED displays and displays with a resolution above UHD. DIGITALEUROPE proposes this exemption to be extended also to QLED displays as well as large displays such as televisions above 85 inch (these very large televisions form a very small market share and this is not expected to increase significantly in terms of absolute quantities).

Last but not least, we believe it would be suitable for the Commission to evaluate the appropriateness of the proposed Tier 3 requirements before they come into force, considering the extremely high fail rate estimated for Tier 3. Therefore, the review clause in Article 10 of the draft regulation should include the evaluation of the proposed Tier 3 on-mode limits, as suggested below:

*Article 10
Evaluation*

The Commission shall evaluate this Regulation in the light of technological progress, including test standards and present the results of this evaluation to the Ecodesign Consultation Forum no later than 1 July 2020.

In particular, the evaluation shall assess whether:

- 1. the specific Tier 3 eco-design requirements established by this regulation are appropriate;*
- 2. it is appropriate to set stricter eco-design requirements for electronic displays;*
- 3. it is appropriate to set specific energy efficiency requirements for signage displays;*
- 4. it is appropriate to set additional requirements for new and emerging display technologies, including high dynamic range, 3D mode, high frame rate, and resolution levels above UHD-8K (33,177,600 pixels);*
- 5. it is appropriate to set additional requirements to enhance durability, to facilitate repair, reuse or dismantling at end of life;*
- 6. it is necessary to update the definitions or the scope of the Regulation;*
- 7. it is appropriate to set resource efficiency requirements for displays integrated into products covered by other Ecodesign regulations implementing Directive 2009/125/EC;*
- 8. if new test standards for electronic displays would suggest adaptation of regulatory requirements .*

3.2 Standby and Network Standby mode limits

3.2.1. Off Mode and Standby Mode:

Display devices can have multiple functions. While no picture or sound is produced, there are several functions that might be active (e.g. connected displays can download content, information about shows, news/sports updates, EPG update, scheduled background recording, scheduled software updates, downloading software, warming up). This data exchange consumes power, but not in a stable manner, so it is not appropriate to be covered by the standby energy consumption limits. The definition of Standby mode in this draft regulation should be aligned with Commission Regulation (EC) No 1275/2008, where standby mode is correctly defined as a state where only the reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or information or status display, are active.

Considering that the scope of this new regulation will cover a significantly larger array of displays than the previous one, including a variety of special purpose monitors, the proposed 0.3W power consumption limit in standby mode is not realistic. The outcome of this requirement will be a restriction of market access for many products (that are otherwise fully compliant) without delivering any meaningful energy/CO₂ savings. A quick look at the display models launched in 2016 shows that over half of these models will be removed from the market as soon as Tier 1 comes into force:

Total	Standby above 0.3W (Fail)	Standby up to 0.3 W (Pass)
582	322 (55.3%)	260 (44.7%)

In addition, the Commission should take into account that professional displays or special purpose monitors tend to have a higher power demand in standby mode, for which there are limited technical solutions to comply with a 0.3W standby power consumption limit. It should also be noted that it will be impossible to comply with the 0.3W limit when the "fast start" reactivation function only turns off the backlight. Technical argumentation explaining the difficulties to achieve 0.3W standby limit, for displays with special functionalities and professional displays, are described in Annex 3. Consequently, paragraph 2.1.1 should be modified to:

2.1.1. The power demand of an electronic display in off-mode or in a standby mode providing only a reactivation function or providing a reactivation function and an indication of enabled reactivation function only, shall not exceed 0.5 W.

For displays mentioned in Article 1 point 3, DIGITALEUROPE proposes the following additional power demand allowances for off and standby mode:

- Touch – 1.5W (as per Energy Star 7.0 allowance)
- Fast start/quick start function enabled condition – 0.8W

Therefore, Annex II point 2.1.2 should be modified to:

2.1.2. The following power demand allowances may be added to those given in 2.1.1 for the following functions if enabled as delivered by the manufacturer:

- *reactivation using only voice recognition and activation sensor: 0.5 W maximum;*
- *reactivation using only room presence/gesture detection and activation sensor: 0.5 W maximum;*
- *reactivation using both voice recognition and room presence / gesture recognition sensors: 1.0 W maximum;*
- *information/status display: 0.5W maximum;*
- *for touchscreen displays: 1.5W maximum;*
- *for fast start or quick start reactivation function: 0.8W maximum.*

Some EMC class A displays (e.g. broadcast displays) will be covered, for the first time, by the standby power demand limit, even though these products are currently exempt from the scope of Commission Regulation (EC) No 1275/2008. Because such products have a much longer design cycle and life in the market, DIGITALEUROPE recommends the Commission to either exempt these specific products from the standby power demand limit, or delay the application of the standby related requirements to July 2019.

For security displays, providing off mode and/or standby mode is in many cases inappropriate for the intended use as security management, however current paragraph 2.2.1 does not specify an exemption for situations where it would be inappropriate for the intended use. As this may cause serious security problems, we request that exemptions where availability of off mode and/or standby mode is inappropriate for the intended use are added to point 2.2.1, and the wording is aligned to the one in Commission Regulation (EC) No 1275/2008:

2.2.1. Equipment shall, *except where this is inappropriate for the intended use*, provide off mode and/or standby mode, and/or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source.

In particular cases it may not be appropriate for a display to switch to standby/off mode when a network connection has to be maintained. For such cases the power management function should instead switch the display into networked standby mode. To allow for this situation, paragraph 2.2.2 of the draft regulation should be modified as follows:

2.2.2. Automatic switch to off mode and/or standby mode, and/or another condition, which does not exceed the applicable power demand requirements for off mode and/or standby mode *and/or networked standby mode shall be set as default, except where this is inappropriate for the intended use.*

In addition, paragraph 2.2.2 above overlaps with some requirements in 3.1, and creates an issue for professional, broadcast and security displays, which are intended to be exempted from Power Management requirements in Annex II point 3, but, through the inclusion of this particular paragraph under point 2, still have to automatically switch to standby/off mode in their default setting. To avoid any inconsistencies, the whole paragraph should be either deleted or incorporated into point 3.

3.2.2. Networked Standby Mode

The draft display regulation proposes to introduce the network standby limit of 2W at the same time with all Tier 1 requirements (1 July 2018), which is 6 months earlier than the entry into force of Tier 3 of Commission Regulation (EC) No 801/2013. No technical evidence has been presented to justify this difference, and because new types of displays are now covered by these requirements, we believe it is essential to have an alignment with Tier 3 of Lot 26 regulation, entering into force on 1 January 2019.

Furthermore, the definition of a network port in Annex I of this draft regulation specifies that *“For computer displays, the interfaces of the video and audio connection with the computer components are not considered to be network ports.”* This implies that sleep mode of a monitor will be considered standby mode with the applicable power consumption limit of 0.3W, which not only is very hard to achieve, but also goes against the Commission Guidelines for the standby regulation, which state that *“sleep mode”* as defined in ENERGY STAR is not considered to be a standby mode. Therefore, DIGITALEUROPE requests the Commission to delete this sentence.

Similar to the Standby mode definition, Networked Standby mode definition must be aligned with the one in Commission Regulation (EC) No 801/2013 in order to consider other functions of the displays.

Last but not least, the requirement in point 2.3.1 (deactivation of network availability in the use mode and standby mode) should include an exemption for networked display products that rely only on one wireless connection, as is the case under the current regulation. In addition, any interaction between the user and the display will necessarily require the activation of the screen (waking up the device from standby), or additional hardware and software to allow remote activation or deactivation. DIGITALEUROPE requests that the requirement during standby mode is deleted.

3.3 Power Management Requirements

The wording in paragraph 3.4 of Annex II is highly problematic, and can be interpreted as a requirement for a monitor to recognize the signal source, something that in most cases is not possible. Computer monitors cannot distinguish between, for example, the HDMI input coming from a set top box and the one from a computer, nevertheless they will switch to sleep mode after 10 minutes of inactivity as required by Commission Regulation (EC) No 617/2013 when connected to a computer. This results not from an ability of the monitor to recognize the host signal source, but from the fact that the power management in this case is controlled by the computer. DIGITALEUROPE believes the intention of the Commission was to clarify that the Automatic Power Down requirement does not apply to monitors when connected to a computer, and, therefore, requests a re-wording of the paragraph to bring more clarity.

DIGITALEUROPE proposes paragraph 3.4 is replaced with the following:

3.4. Electronic displays marketed as computer displays and electronic display products with various selectable input sources, other than TVs, shall follow the power management protocols of computers instead of those power management protocols and features described in points 3.1, 3.2 and 3.3 when displaying the computer signal.

Furthermore, paragraph 2 (f) of Annex IV (Information requirements), which is intended to be read in conjunction with 3.4 of Annex II, should be rephrased to:

(f) For displays with a designated computer signal interface, confirmation that the display product follows the computer display power management protocols set out in Point 6.2.3 of Annex II of Commission Regulation (EC) No 617/2013. Any deviation from the protocols should be reported.

The verification procedure in Annex VI point 5 should be changed to reflect the proposed changes in Annex II point 3.4.

3.4 Allowances and Adjustments

3.4.1. Display products with an external AC to DC power supply (EPS)

Display products are designed for stationary installation, where the product is expected to be permanently connected to the mains. Currently users expect the power supply to be provided with the product, therefore DIGITALEUROPE believes that the allowance criteria for the product to be provided without the charger might limit the uptake of this allowance.

3.4.2. Display products with ABC enabled by default

The 10% allowance does not provide sufficient incentive for ABC take-up in a wide range of products, considering the necessary investments required for the introduction of this function and relevant compliance assurance. We recommend an overall increase of the allowance to 15%, or a differentiation of the allowance based on the percentage of the power reduction achieved at ambient light illumination between 300 lux and 12 lux.

Reduction	Allowance
20%	10%
30%	15%
40%	20%

3.4.3. Display products with additional functions

The regulation should specify that energy consumption of displays with special functions (e.g. Ambilight, etc.) may be tested with these functions turned off.

3.5 Software and Firmware Updates

The intent of these requirements is to inform the user of an increase in energy consumption related to software updates, however the current wording requires software update authorization request even if the update in question is unrelated to energy consumption and will not have any impact on it. We do not understand the purpose of establishing such a requirement for this category of updates, and we suggest rewording paragraph 7 of Annex II as follows:

*Each single software or firmware update, **unless not possibly increasing the energy use of the electronic display in any of the different modes**, shall only be explicitly authorized by the user once the TV is switched on, even if the download and installation can be scheduled at a later moment. The user shall be notified of a possible increase of energy use and in which circumstance or functionality that increase will occur before starting the download and/or installation. The user has the right to refuse an update. A notification has to be shown to the user on the display and kept visible until the user confirms acceptance of **the** completed software or firmware update.*

Note: the Commission should be aware that the devices are often not able to recognize that an update was made. Implementing this requirement will require additional hardware and software into the devices.

4. Resource Efficiency Requirements

4.1 Welding and Gluing Restrictions

The draft regulation would prohibit welding and gluing (other than through the use of double-sided adhesive tape) of batteries, PCB assemblies larger than 0.1 dm²; display panels larger than 1 dm², mercury containing components, capacitors, PMMA boards and internal power supplies. The industry has strong concerns about the approach to such a requirement.

The European Commission has not presented evidence that welding and gluing inherently inhibit removability of components, and that other fastening techniques are always preferable to achieve the objective of the requirement. The requirement further lacks substantiation in that the technical **feasibility, benefits, costs as well as the impact on** product safety, reliability and usability **have not been studied**. The complete absence of a thorough assessment implies the requirement has no creditable basis for inclusion. It also takes no account of

the complexities of such a requirement for specific applications and assumes it can be adopted universally without exception. This was recently confirmed at the stakeholder meeting on the review of another vertical regulation for computers on 16 January 2017, where the same requirements were presented by the JRC. During the meeting, the JRC stated that an assessment of technical feasibility, environmental benefits and costs of the requirements was still work in progress. We call on the European Commission to respect the process set forth in the Ecodesign Directive Art.15.4b, which calls for requirements to be backed up by data with prior assessment of the *“impact on the environment, consumers and manufacturers (...) innovation, market access and costs and benefits”*.

The draft wording prescribes a design trait and does not allow manufacturers to adopt innovative and efficient solutions to achieve the broad objective of the requirement, in this case removability of components for selective treatment as outlined in Directive 2012/19/EU Annex VII and referenced in Recital 21 of the draft regulation. Prohibiting the use of certain fastening techniques is too prescriptive and hampers future innovation and competitiveness of the IT industry. The product design is an industry responsibility for which regulation should respect. The focus should therefore be on the outcome to achieve the regulatory requirement. If the European Commission wants to enable removability of key components for selective treatment, the requirement should cover all joining techniques precluding removal of the components without explicitly prohibiting certain fastening techniques. The CENELEC standardization action to address material efficiency will aim to address the broad objective of removability, and as such will not be too prescriptive in the design envisaged in respect of the differing design techniques that compliment easy removal of key components.

Welding means melting material at high temperatures, however all capacitors are soldered (not welded). Soldering should be permitted for capacitors as they can still be removed manually without being destroyed. Internal power supplies should be removed from the list as the components of concern are already covered by the second point (PCB assemblies larger than 0.1 dm²).

Considering this total lack of data and a priori assessment underlying gluing and welding requirements, DIGITALEUROPE requests the removal of the welding and gluing restriction in Annex III point 1 from the draft regulation. Instead, we strongly recommend for the rewording to be clear on the intent of the requirement (restriction of joining techniques that prohibit removability) without prescribing the use of specific *“joining or sealing techniques”*.

Manufacturers shall ensure that joining or sealing techniques do not prevent the removal 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;

Accessing components shall be ensured by documenting the sequence of dismantling operations needed to access the targeted components.

Exemptions apply where non-removable joining and sealing techniques are required to assure safety, quality or functionality. For batteries, exemptions in the Battery Directive 2006/66/EC amended by Directive 2013/56/EU apply.

4.2. Marking of Plastic Parts

The marking requirements, if pursued, should follow the international standards in place such as ISO 1043 for Plastics – Symbols and abbreviated terms (part 1 on Basic polymers and their special characteristics and Part 4 on Flame retardants) and should not mandate the use of another notation method ('x-FR-y'), which is slightly different from what is prescribed by the ISO standard. We propose the Commission to reword the requirements as follows to avoid possibility of double marking.

Plastic parts heavier than 50 g shall be marked by specifying the polymer and flame retardant type according to ISO standards. Exemptions for marking apply for:

- *Plastic parts ≤50 g*
- *Parts that 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 (e.g. Part with less than 200mm² of flat surface)*
- *Parts where the material code is unable to be molded into the part for aesthetic reasons (e.g. transparent parts)*
- *Speakers, printed circuit boards, labels, cables, connectors, electronic components, ESD components, and EMI components and accessories*
- *Optical components*

4.3 Cadmium and Mercury logo

It should be clarified that the "Mercury inside"/"Cadmium inside" logos are required only when the exemptions in the RoHS directive are being used and the substances used exceed the maximum concentration values set by the directive.

4.4. Timeline

In line with the timeline proposed for on-mode Tier 1 and 2 (in section 3), we propose the change of resource efficiency requirements timeline as follows:

From 1 January 2021:

1. Requirements on design for dismantling, re-use, recycling and recovery
2. Marking of plastic parts

From 1 January 2019:

3. Mercury inside logo
4. Cadmium inside logo

5. Information Requirements

5.1 Document Retention Period

Article 9 point 3 of the Ecodesign Directive requires documentation to be kept available for 10 years after the last model has been placed on the market. However, the draft display regulation suddenly changes this requirement to 15 years without any justification. We believe the document availability requirement should not deviate from the 10 year provision in the Directive. In addition, the timeline for information requirements should be aligned with that of Tier 1 on-mode requirements. The suggested rewording is as follows.

From 1 January 2019, the following information shall be kept available for 10 years from the day the last model of a product family was placed on the market and free of charge:

5.2 General Information

Under the Annex IV point 1 (General Information), manufacturers are required to declare the **year of manufacture** for each model. However, this creates a problem for products that run for several years, resulting in a necessity to update the information each year for every model that runs for multiple years. To avoid an administrative burden that does not bring any additional benefit, DIGITALEUROPE requests the Commission to delete this requirement. In addition, we recommend that the general information requirements under the display Ecodesign Regulation are included in the product fiche information requirements under the future display Energy Labelling Regulation so that manufacturers can provide only one set of information for both regulations.

5.3 Technical information

Technical documentation should not be made available in free access websites or database because it contains confidential information. Thus, DIGITALEUROPE requests that technical information is only provided **upon request by market surveillance authorities**, which is the case with all other implementing measures.

For signage display products, it should be also noted that they will be subject to detailed technical information requirements, even if they are fully exempt from energy and performance requirements under Annex II. We understand that the Commission wants to make general information available also for signage display products for future reviews, but it should not create a significant additional burden by requiring signage manufacturers to put together and make available extensive technical information about the parameters, for which there are no mandatory requirements. We suggest removing signage displays from the scope of Technical Information requirement under Annex IV point 2.

5.4. Repair and End-of-Life Information

Point 3 of Annex IV says: *“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 a website or in a common database of manufacturers, their authorized representatives or importers.”*

DIGITALEUROPE would welcome a clarification on the meaning of *“upon registration”*. We are also questioning the use of the wording *“third parties dealing with maintenance, repair, reuse and upgrading of displays upon registration and provided in a website or in a common database of manufacturers”*.

Requiring the disclosure of detailed information on dismantling operations including a product diagram to non-affiliated third parties hampers industry's competitiveness (information on how to disassemble at the same time reveals IPR-sensitive information on how to assemble a product) and create significant liability issue for manufacturers in case the information is used by non-affiliated third party repair/reuse organizations. Since repair is part of brands after-sales strategies and a way for companies to compete to offer appropriate services to consumers, it should always be undertaken by properly qualified repair service personnel. Manufacturers provide repair documentation/software to recognized repair service centers that are qualified to undertake repairs safely. For safety and liability reasons, it is crucial that no obligation is set to make repair and disassembly information available to any third party.

DIGITALEUROPE believes that the most relevant information to provide may be about safe dismantling of components by recyclers. However, requiring the manufacturers to provide information about the number of screws or the necessity to utilize a screwdriver does not make sense and never leads to the best choice of recycling method. Rather, the manufacturers should provide general instruction for dismantling with special notices for safe and efficient dismantling. We therefore propose to delete point 3(a) and reword 3(b) as follows:

(b) general instructions on the sequence of operations needed to remove these components and special notices for safety and efficient dismantling, if any;

It is proposed that the information above is provided upon request. This is to ensure that it reaches the right audience, to prevent loss of sensitive information and importantly to ensure consumer safety.

For more detailed information including the location of certain components and the use of hazardous substances, the Commission should recognize that the WEEE directive already sets an information requirement under Article 15 (Article 11 in WEEE I). Under the framework of the WEEE directive, industry already has a voluntary agreement aiming to provide necessary information to recyclers in a harmonized way and is in the process of updating the agreement to ensure that recyclers get the most relevant information quickly (e.g. through a centralized on-line tool). In various stakeholder meetings, recyclers have repeatedly confirmed that they do not have time to check model-by-model, component-by-component information (other than clear marking) as part of actual recycling processes and would only appreciate generic information at the product group level or aggregated information at the industry level.

Considering such feedbacks, it can be safely concluded that the information on plastic marking exemptions, plastic and flame retardant types and weight, and detailed information on hazardous/rare/precious substance usage including its location and weight will not be helpful at all. On the other hand, collecting such information and making it available creates tremendous burdens on industry. First of all, the amount of the mentioned substances is not always available due to the very complex supply chain, and sometimes the information is considered confidential. In addition, manufacturers will have to manage the accuracy of weight data of each plastic component and trace very small quantities of hazardous/rare/precious substances in the products for correct declarations. This seems to be a typical case of significant imbalance between costs vs. benefits of eco-design requirements. DIGITALEUROPE calls on the Commission to completely delete paragraphs 3 (d) on substance information and 3 (e) on polymer and flame retardant type information and move paragraph 3 (c) on plastic marking exemption to technical information requirement.

Annex 1: Definitions

1. Electronic display

The definition given in the 2014 draft should be kept to avoid open-ended scope expansion:

‘Electronic display’ means a display screen and associated electronics that, as its primary function, displays visual information from wired or wireless sources, that is primarily intended for use in a household and/or in an office, and that is, as delivered to the user to be connected to an AC mains power source, or a standardized DC power source (e.g. USB) for its intended use, either directly or via an external power supply.

2. Digital Signage display

Remote Commander controlling the signage system and the individual display is not always necessary for signage displays since they can be controlled by PC through the dedicated controller box. In addition, signage displays without wireless interfaces can be connected to wireless networks using a separate accessory (e.g. Wi-Fi dongle). In order to cover all types of configurations, we suggest the following re-wording of the Digital Signage display:

‘Digital signage display’ (also known as ‘public display’ or ‘commercial signage display’) means an electronic display that is designed primarily to be viewed by multiple people in non-desktop based environments. Its specifications shall include all of the following definitive features:

- (a) Unique ID and/or Unique address to enable addressing a specific display screen (including individual installations as well as applications involving a display group of several units, such as a "video wall");*
- (b) Wired or wireless Remote control disabling function to prevent unauthorized access to display settings and displayed image (e.g. by requiring an authentication mechanism or analogous restriction);*
- (c) Network connection (encompassing a hard-wired or wireless interface) for controlling, monitoring or receiving the information to display from remote unicast or multicast but not broadcast sources;*
- (d) Designed to be installed hanging, mounted, or fixed to a physical structure for viewing by multiple people¹*

1 - public viewing is not defined, and signage displays can also be used in places which are not public

3. Large Conference Room Displays

‘Large Conference Room Display’ means an electronic display which allows direct viewer for multiple users. A large conference room display shall include all of the following features:

- (a) Primarily designed to be installed hanging, mounted on a ground stand or fixed to a physical structure for viewing by multiple people;*
- (b) a display surface greater than 50 dm².*
- (c) It needs to have wall mounted capabilities*
- (d) It can have remote access capabilities*

4. Professional display

The criteria given in the Professional display definition do not fully reflect the specifications of mainstream products for professional displays. For example, the proposed criteria b) in the draft regulation sets the threshold of native resolution at 2.7 mega pixels, while there are still a significant amount of professional displays in the market using 2.3 mega pixels (1920x1200). Contrast ratios and colour gamut are often considered more important than native resolution levels, therefore we suggest to modify the threshold for native resolution at 2.3 mega pixels.

It should be also pointed out that the term “(...) a contrast ratio of at least 1000:1 measured at” is not very precise because there are several options to determine the contrast ratio for a model: 1000:1 (min) 1000:1 (typ) 1000:1 (max), so more specific definitions would be welcomed. For curved monitors, moreover, the measurement issue relating to horizontal viewing angles should be recognized since measurement at 83° angle might not be possible for a future generation of monitors with a more pronounced screen curvature. In order to be future-proof, the requirement of a contrast ratio of 60:1 measured at a horizontal viewing angle should be exempted for curved screen monitors. For these monitors, the contrast ratio should be measured only at a perpendicular to the vertical plane.

Last but not least, we strongly recommend the Commission to add sRGB specification (e.g. sRGB 96%) to the professional display definition since Adobe RGB is not the only specification available for professional displays.

The proposed re-wording of the professional display is as follows:

‘Professional display’ means an electronic display designed and marketed for professional use for editing video and graphic images. Its specification shall include all of the following features:

- (a) a contrast ratio of at least 1000:1 measured at a perpendicular to the vertical plane of the screen and at least 60:1 measured at a horizontal viewing angle of at least 85° relative to that perpendicular. For curved monitors, the contrast ratio should be measured only at a perpendicular to the vertical plane;*
- (b) a native resolution of at least 2.3 mega pixels;*
- (c) colour gamut greater than 96% sRGB colour space, or equivalent. Shifts in colour space are allowable as long as the resultant colour space is still greater than 96% sRGB or equivalent. Colour and luminance uniformity shall be as required for Grade 1 monitors;*
- (d) not intended for public areas.*

5. Broadcast display

A broadcast display can be designed and marketed for professional use by broadcasters and video production houses for video content having a pixel zoom or alternatively a pixel-to-pixel feature. Both ‘Pixel Zoom’ and ‘Pixel To Pixel’ are meant to help checking the video signal status at actual pixel resolution by enlarging picture on a pixel basis (without scaling process). The only difference in between is its magnification ratio (higher for ‘Pixel Zoom’ and ‘Pixel To Pixel’). Therefore, we recommend amending the definition as follows:

‘Broadcast display’ means an electronic display designed and marketed for professional use by broadcasters and video production houses for video content creation. Its specification shall include all of the following features:

- (a) colour calibration function;*
- (b) input signal analysis function for input signal monitoring and error detection **such as** wave-form monitor/vector scope, RGB cut off, pixel zoom **or pixel to pixel**, interlace mode, screen marker;*
- (c) SDI (Serial Digital Interface) or VoIP (Video over IP) integrated with the product;*
- (d) not intended for public areas.*

6. Gaming Monitor

Gaming monitors are not defined in the draft display regulation, but we propose the following definition in the context of on-mode allowances for special purpose monitors:

“Gaming Monitor” means a monitor that supports:

- (a) variable V-Sync such as G-Sync/FreeSync (and its panel), and*
- (b) variable refresh rate ranging from 48Hz~76Hz (for 60Hz panel) or 48Hz~145Hz (for 144Hz panel).*

7. All-in-one video conference system

Some of the terms and specifications (e.g. KIOSK mode or H 323) introduced in the proposed definition of ‘All-in-one video conference system’ are not always used. In order to avoid excluding some All-in-one video conference system that are otherwise perfectly fit for video conferencing, we propose a more general definition as follows:

“All-in-one video conference systems means dedicated systems for high definition video conferencing and collaboration, integrated within a single enclosure, whose specification shall include all of the following functions and features:

- (a) a user interface, high definition camera(s) , display(s), a sound system and processing capabilities for encoding and decoding video and audio*
- (b) High Network availability (HiNA equipment) as defined in Article 1 of Commission Regulation 801/2013 (LOT26).”*

8. Digital white board

Similar to signage displays, digital white boards are not necessarily installed in public places. Therefore, we suggest modifying the definition as below:

‘Digital white board’ means an electronic display which allows direct viewer interaction with the displayed image by touch, gesture or voice that is designed primarily to provide presentations or lessons. A whiteboard display shall include all of the following features:

- (a) **Primarily** designed to be installed hanging, mounted on a ground stand or fixed to a physical structure **for viewing by multiple people;***
- (b) Integrated or integrable computer and computer software with specific functionalities to manage content and interaction;*
- (c) a display surface greater than **40 dm²***

9. Display panel

Consistent with the definition in Directive 2012/19/EU Annex VII “Selective treatment for materials and components of waste electrical and electronic equipment referred to in Article 8(2)”, which serves as a reference for the list of components in Annex III point 1, the term ‘display panel’ should be defined in the Lot 5 regulation as below:

‘Display panel’ is defined as an electronic display assembly (e.g. liquid crystal or other technologies) together with their casing, where appropriate.

Annex 2: Technical challenges in achieving 0.3W standby mode limit.

The energy demand of a product in standby mode depends on the number of components it includes, its functional complexity and its overall power consumption.

While some products, with simpler architecture, may be able to comply with a 0.3W power cap, others more complex devices will not be able to do so. The complexity of the device is key to determine minimum energy consumption technically achievable, for example:

- Example of a TV with quick start function:
 - SoC (Solution on Chip) for TV microcomputer
 - Wi-Fi, Bluetooth
 - DDR SDRAM memory integrated circuit
 - Peripherals (sensor for infrared remote control, etc)
 - AC/DC power conversion
 - **0.8 W Total**
- Example of a product with simple architecture:
 - 0.17 W Main IC (micro-processor + Memory Control Unit) & flash memory
 - 0.21 W AC/DC loss
 - **0.38 W Total**

Energy consumption will increase proportionally to the complexity of the system, improved features, and quick availability after wake-up. Functionalities such as Fast or Quick start of TV sets improve the usability of the devices, reducing wake up time to few seconds instead of minutes. Allowances for such functionalities need to be included, especially for EMC Class A products, which have particular complex structures.

Adding up to the previous, the efficiency of the power supply is a critical parameter affecting total standby consumption. This is because the efficiency of the power supply decreases when the electric power is low (i.e. lower than 0.5W), resulting in high AC/DC energy losses. For complex products, improving power supply losses alone is not sufficient to lower standby power further, therefore existing designs will need to be significantly redeveloped and a large investment will need to be done.

In addition, 0.3 W limit would entail a high risk of non-compliance during market surveillance, as the variability in the measurement is greater with decreasing electric power, specially based on criteria of failure of only 3 samples (which is not statistically representative).

Furthermore, the cost benefit of lowering standby limits is questionable from a consumer perspective. A reduction in energy consumption from 0.5W to 0.3W represents a saving of €2.5 per unit after 5 years of use, a very small saving comparing the substantial net cost to consumers.

Annex 3. Additional issues that require correction or clarification

Recital (12) – The recital mentions that “energy performance of these displays has to be part of the overall energy performance of the product integrating them.” - This implies that testing for refrigerators incorporating displays should be done with the display on, which is not a requirement under the current regulations/standards. It is absolutely inappropriate for the Display regulation to make provisions on the testing methodology of refrigerators or other unrelated products, therefore the recital should be deleted.

Article 1 – The scope should be changed to the one proposed in point 1 of this position paper. The Commission should consider whether there is any need for additional clarification for products like e-readers and LCD Rack Console (KVM/KMM -“keyboard, video, and mouse” or “keyboard, mouse, and monitor” means a computer monitor that can operate with a KVM switch and is designed to be used in a server rack for use solely in a data centre).

Article 5 – The article mentions points 8 to 10 of Annex II, which are missing from the text.

Annex II point 1 – “ π ” in the EEI formula is most likely a typo and should be corrected.

Annex II point 1.3 – Reference to year 2021 is not consistent with the timeline specified in Article 3 and should therefore be corrected to 2022.

Annex II point 2.3.1. – The wording of this requirement is ambiguous. It is not clear to us whether the intention of this requirement is to allow the user to activate/deactivate network availability when the display is in standby mode. If that is the case, there is no need for this requirement because connecting or disconnecting a network cable can achieve just that. As previously stated in this paper, we request the Commission to delete this requirement for standby mode.

If, however, the requirement instead refers to providing in the menu of the device the following use cases for network availability, we request the Commission to reword this paragraph so that it clearly specifies so.

On-mode	Standby-mode
ON	ON
ON	OFF
OFF	ON
OFF	OFF

Annex II point 2.4.2 – The paragraph does not clearly explain whether it is allowed to use the same allowances specified under point 2.1.2 for networked standby limits. Clarification whether that is the case or not is required.

Annex II point 4 – Many models of monitors do not have a home/standard mode. We believe the requirement to be placed on the market with the home mode/standard mode set by default is not appropriate for monitors, and we request the paragraph to be replaced with the wording in Regulation (EC) 642/2009: *“Televisions with forced menu on initial activation of the television shall provide a ‘home-mode’ in the forced menu, which shall be the default choice on initial activation of the television. If the user selects a mode other than ‘homemode’ on initial activation of the television, a second selection process shall be prompted to confirm this choice.”*

Annex II point 6.1. – The “audio system” referred to in this paragraph should be clearly defined. The paragraph also references Annex IV.1 (b), which is missing. We believe the reference should actually be to Annex IV.2 (a).

Annex II point 7 – Typo: "FIRMARE"- should be corrected to FIRMWARE.

Annex III point 1 – Requirement does not specify whether soldering is considered welding.

Annex IV point 2 (b) ii. – “the test pattern for the video signal used for the measurement of peak luminance required for 2 (b) iv. and 2(b) v. below.” The reference should be changed to 2(b) v. and 2(b) vi.

Annex IV point 2, last paragraph – the phrase “The list of all equivalent electronic display models may be made available only on request and for the purposes of compliance and verification of compliance with the requirements of this Regulation, control purposes by .” is missing some text.

Annex IV point 3(a) – Plastic parts referred in the paragraph are not defined. It is not clear whether Electronic components with a plastic molding or a plastic frame (e.g. fan, loudspeaker), wiring, cables, connectors, labels, packaging plastic parts or tapes are covered by the requirement. It is also not clear whether the information is only relevant for parts heavier than 50g. In addition, the referenced Table IV.2 is missing.

Annex IV point 3(d) – Clarification required whether the information on Cd, Pb, Hg is only relevant for parts covered by RoHS exemptions. Information related to the weight limit for reporting arsenic and indium is not specified.

Annex IV point 3(e) – In Table I, is the "overall mass of plastic parts" the sum of all plastics heavier than 50g or the sum of all plastic parts of the BoM (Bill of materials), independent of the weight?

Annex 4. DIGITALEUROPE comments on the CLASP assessment of the level of ambition of proposed Ecodesign measures and their alternative recommendations

The CLASP paper, in its attempt to analyze and update the targets proposed by the EU Commission, starts from inaccurate assumptions, shows a simplistic approach that does not take into account a number of complex aspects, and reaches conclusions that undermine the goal of setting realistically achievable energy efficiency targets, which will facilitate continuous energy efficiency improvements over time.

The main concerns DIGITALEUROPE has over the approach presented by CLASP are as follows:

1. **The Commission proposal expanded the scope of the regulation to PC monitors, but CLASP does not take into account the current energy performance of monitors when analyzing the level of ambition in the Commission proposal.** The 2016 DIGITALEUROPE database¹ shows that for monitors (especially for those with smaller screen sizes) it is already problematic to meet the Commission proposed targets, mainly because of the power supply converting loss combined with picture process power, which result in a relative higher energy consumption from non-display electronics as a percentage of total energy consumption. Further strengthening of the proposed requirements, as suggested by CLASP, would have an even more disproportionate effect on monitors, resulting in a significantly large number of models being removed from the EU market as can be seen below:

¹ The 2016 DIGITALEUROPE database has been developed in August 2016 and contains performance data for all Television, Monitor and Signage models that have been placed on the European market by the DIGITALEUROPE members in 2016.

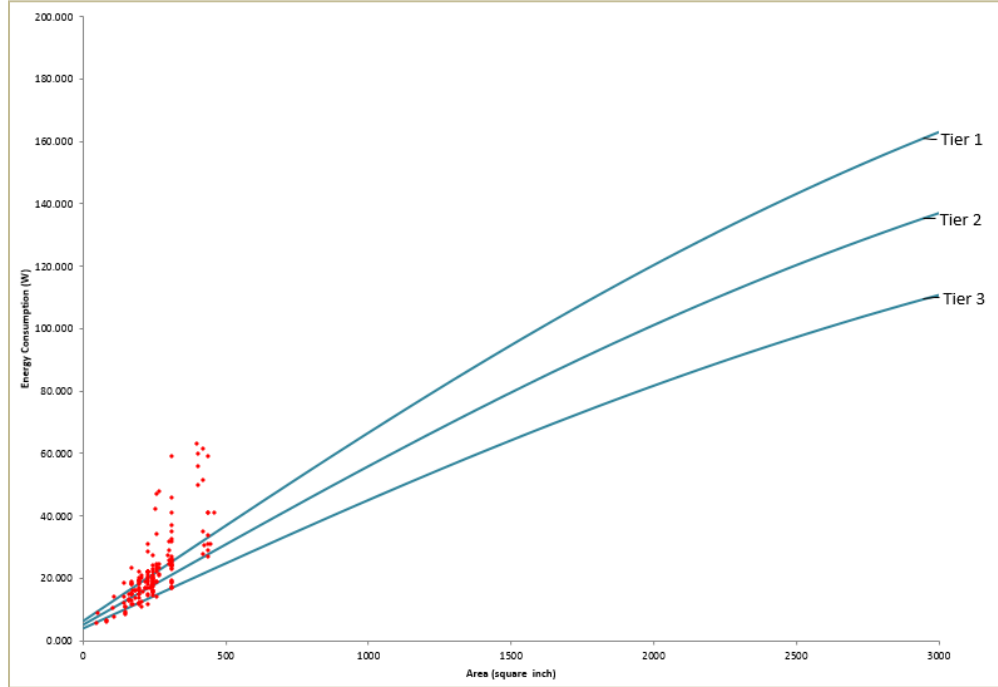


Figure 1: Power consumption of Monitors with screen resolution below 3840 × 2160 pixels compared to the updated power consumption limits for HD displays proposed by CLASP. Source of monitor data: 2016 DIGITALEUROPE database.

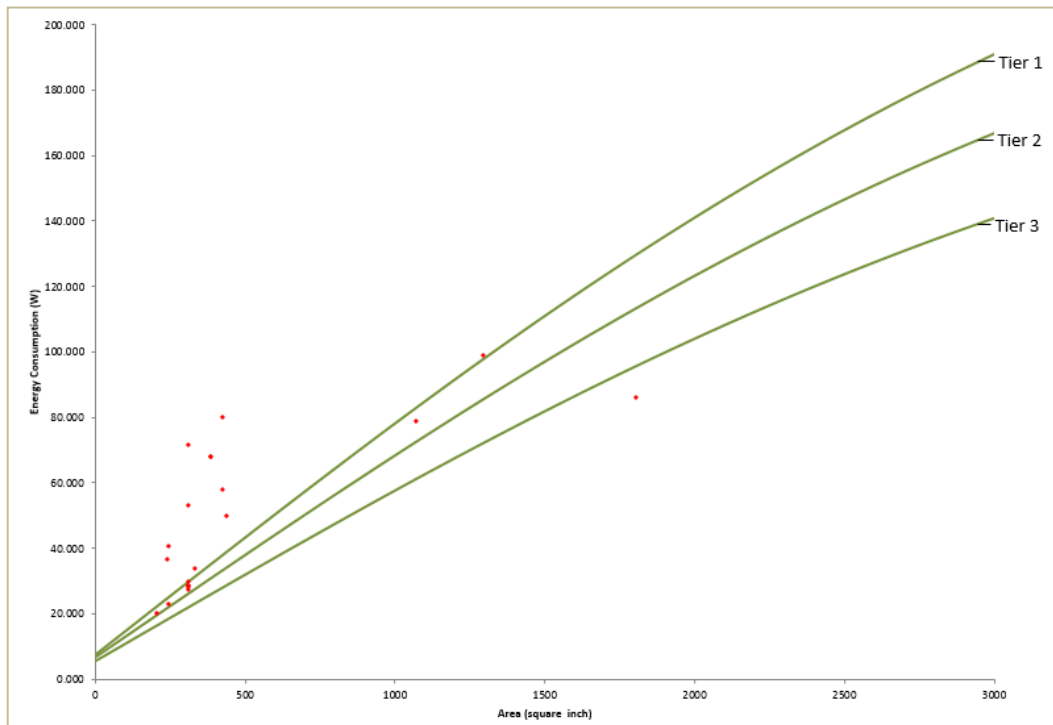


Figure 2: Power consumption of Monitors with screen resolution equal to and above 3840 × 2160 pixels compared to the updated power consumption limits for UHD displays proposed by CLASP. Source of monitor data: 2016 DIGITALEUROPE database.

In addition, it is important to differentiate energy requirements for normal displays from those for specialty displays (for example: Large Displays with Touch, Displays > 40", Medical or Gaming Displays, etc.). Exemption criteria should be set in place for some of these special types of displays.

2. It should also be pointed out that the CLASP recommendation takes a step back from the necessity of harmonizing product energy efficiency requirements at a global level. By implementing the limits proposed by CLASP, **displays that have been certified with ENERGY STAR in the US may not even be allowed on the EU market**, as can be seen below in the case of ENERGY STAR certified monitors.

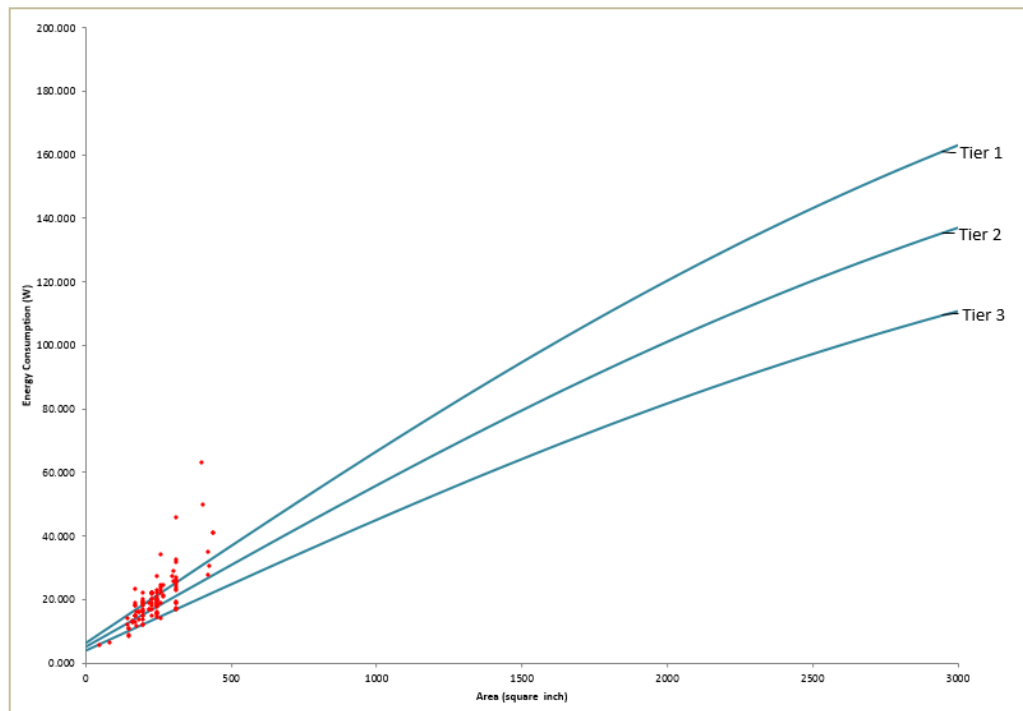


Figure 3: Power consumption of ENERGY STAR Certified Monitors compared to the power consumption limits for HD displays proposed by CLASP. Source of monitor data: 2016 DIGITALEUROPE database. Only monitors with screen resolution below 3840 × 2160 pixels have been taken into account.

3. **Even when we focus only on televisions, we find the assumption of a 7% annual technology improvement rate highly problematic.** As we have already pointed out in the a previous DIGITALEUROPE position paper dated to 5 December 2014, determination of the annual technology improvement rate based on a simple comparison of a small number of datasets does not take into account the technology transition that took place during this period, as well as the possible limitations in the expected developments of new technologies.

The annual rate of improvement calculated by CLASP between 2012 and 2016 is not an actual evolution of technology, but a direct outcome of the push and pull effect of the Ecodesign and Energy Labeling measures. Between 2012 and 2016 industry had to prepare first for the entry into force of Tier 2 Ecodesign requirements in April 2012, and then for two subsequent introductions of additional energy classes on the label (January 2014 and January 2017). The energy efficiency improvements observed during this interval resulted from the gradual phase-out of less efficient models from the market, coupled with significant investments from the industry to maintain their products in the top energy efficiency classes.

Analyzing the 2016 DIGITALEUROPE data for televisions versus the Tier 1 requirements proposed by the Commission, we can observe that the application of Tier 1 alone will show in calculations a 6% apparent energy efficiency improvement rate after entry into force (2018), even if actual technological improvements are considered zero. Therefore, the real technological improvement rate should not be confused with the average increase of energy efficiency of products on the market.

Strengthening the Ecodesign requirements based on the assumption that industry can achieve a 7% annual technology improvement rate is highly inappropriate and can jeopardize the economic viability of industry to deliver compliant and innovative products on the EU market. In addition, this kind of approach can act as a penalty on the industry which has been taking energy efficiency as a priority.

4. **The CLASP recommendation will have a disruptive effect on product design cycles and technological innovation.** To cope with very strict short term requirements manufacturers will have to shorten these cycles and change focus from innovative technologies with vast potential on the long term, to palliative solutions which might deliver the improvement required to keep their products on the market but would leave little potential for further energy savings. This would not only be disruptive for technological progress as a whole, but it will also disproportionately impact smaller manufacturers with consequences for the competitiveness of the EU market.
5. **The CLASP report equates technological progress with energy efficiency without taking into account customer satisfaction and the need to properly balance performance, affordability, quality, and design.** These aspects should not be separated when assessing the impact of any proposal. A market study should have been included in the CLASP report to determine the trends in consumer priorities and to address the economic viability of the proposed requirements and the possible losses of functionality.

The following fundamental question should be asked: Is the intention of the EU Commission, through implementation of Ecodesign requirements, to deny market access to large numbers of products without the possibility of having them replaced at a similar price and functionality, or to propose realistic targets that can be reached in a reasonable amount of time?

We strongly believe that the spirit of the Ecodesign Directive and its associated implementing measures is not to create artificial barriers to the free market, but to propose realistically achievable targets, which will contribute to important energy savings without creating an excessive burden for the industry or consumers. Thus, these requirements should be assessed not only from energy savings perspective but also by taking into

consideration other aspects of product quality and functionality developments as well as the need for new technologies and functionalities to be made available to the consumers wishing to enjoy their benefits.

6. Finally, DIGITALEUROPE agrees with a differentiation in power consumption limits based on resolution, however we consider it more appropriate to have a clear distinction in requirements for displays with resolutions up to HD and for displays with resolutions above HD. Larger resolution displays are disproportionately impacted by the Commission proposal, and should benefit from either an allowance or less strict requirements. For displays with resolutions above UHD, it is critical that they are exempted at least from the Tier 1 requirements. For monitors, applying the up to/above HD distinction is more appropriate than a HD/UHD one, but it might still prove problematic, as they are covered by multiple standards for display resolution and a simple differentiation might not be enough to capture the complexity of this product group (monitor resolution is better defined, including: FHD, QHD, WQHD, WFHD, UHD, 5k2k, etc.). A better differentiation in the power consumption limits for displays with different types of resolutions could be achieved by introducing resolution related parameters in the formulas.

In conclusion:

- The CLASP report starts from inaccurate premises when claiming the 2014 Commission proposals are out-dated and not effective. While they may remove a smaller percentage of products from the market than the targets proposed by CLASP, they still push the market towards a continuous improvement of energy efficiency while at the same time offering the industry the possibility to explore new technologies with significant potential.
- The methodology used by CLASP to determine the trends in energy efficiency improvement is flawed, as differences in average efficiency from year to year are heavily influenced by introduction of Ecodesign and Energy Labelling Tiers within that period and are not a good measure of real technological improvement. The average annual technological improvement rate calculated by CLASP through this methodology should never be used as a justification for implementing unreasonably strict requirements.
- The Tiers proposed by the Commission are already too close together, and a strengthening of the requirements for these Tiers will disrupt product cycles and hinder technological innovation.
- Imposing stricter targets can be acceptable on the condition of them being realistic, correctly assessed for all product types in scope, and appropriately spaced in time so that the market disruption is minimal. A higher interval between Tiers can offer the industry the possibility to orient their R&D in a suitable, consistent and coherent manner.

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ABOUT DIGITALEUROPE

DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

DIGITALEUROPE ensures industry participation in the development and implementation of EU policies. DIGITALEUROPE's members include 61 corporate members and 37 national trade associations from across Europe. Our website provides further information on our recent news and activities: <http://www.digitaleurope.org>

DIGITALEUROPE MEMBERSHIP

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National Trade Associations

Austria: IOÖ	Germany: BITKOM, ZVEI	Slovakia: ITAS
Belarus: INFOPARK	Greece: SEPE	Slovenia: GZS
Belgium: AGORIA	Hungary: IVSZ	Spain: AMETIC
Bulgaria: BAIT	Ireland: ICT IRELAND	Sweden: Foreningen Teknikföretagen i Sverige,
Cyprus: CITEA	Italy: ANITEC	IT&Telekomföretagen
Denmark: DI Digital, IT-BRANCHEN	Lithuania: INFOBALT	Switzerland: SWICO
Estonia: ITL	Netherlands: Nederland ICT, FIAR	Turkey: Digital Turkey Platform, ECID
Finland: TIF	Poland: KIGEIT, PIIT, ZIPSEE	Ukraine: IT UKRAINE
France: AFNUM, Force Numérique, Tech in France	Portugal: AGEFE	United Kingdom: techUK
	Romania: ANIS, APDETIC	