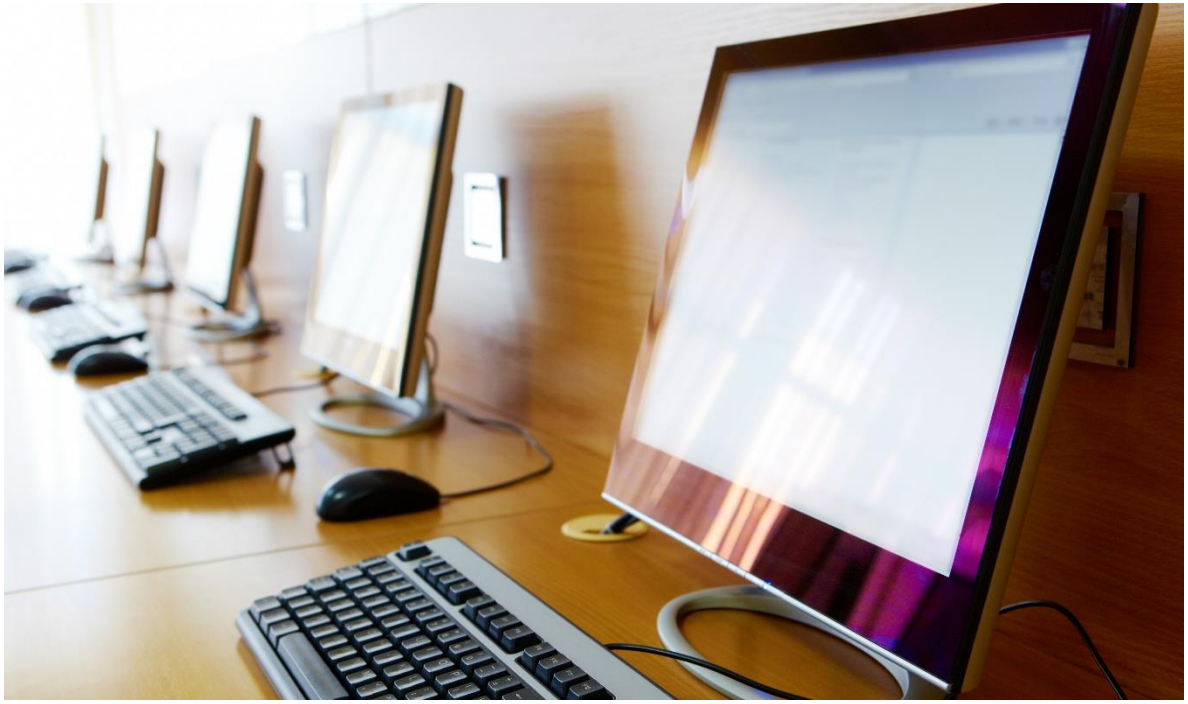
PREPARATORY STUDY ON THE REVIEW OF REGULATION 617/2013

Stakeholder meeting – policy options and suggested requirements

16th January 2017

Project's website: https://computerregulationreview.eu/



SUGGESTED ENERGY EFFICIENCY POLICY OPTIONS & REQUIREMENTS

PRESENTATION OF POLICY OPTIONS

Policy option	Description of policy option
Option 1 – BAU	No action ('Business-as-Usual', BAU)
Option 2 - Ecodesign	**<u>Reviewed ecodesign requirements</u>** a. ETEC limits & capability adjustments: product category level (ENERGY STAR v6.1) b. Low power mode requirements (ENERGY STAR v6.1) c. Power management requirements (current regulation) with new technology provisions d. IPS efficiency requirements at 10%, 20%, 50%, 80%, 100% rated output (efficiency levels of 80Plus registered IPS)

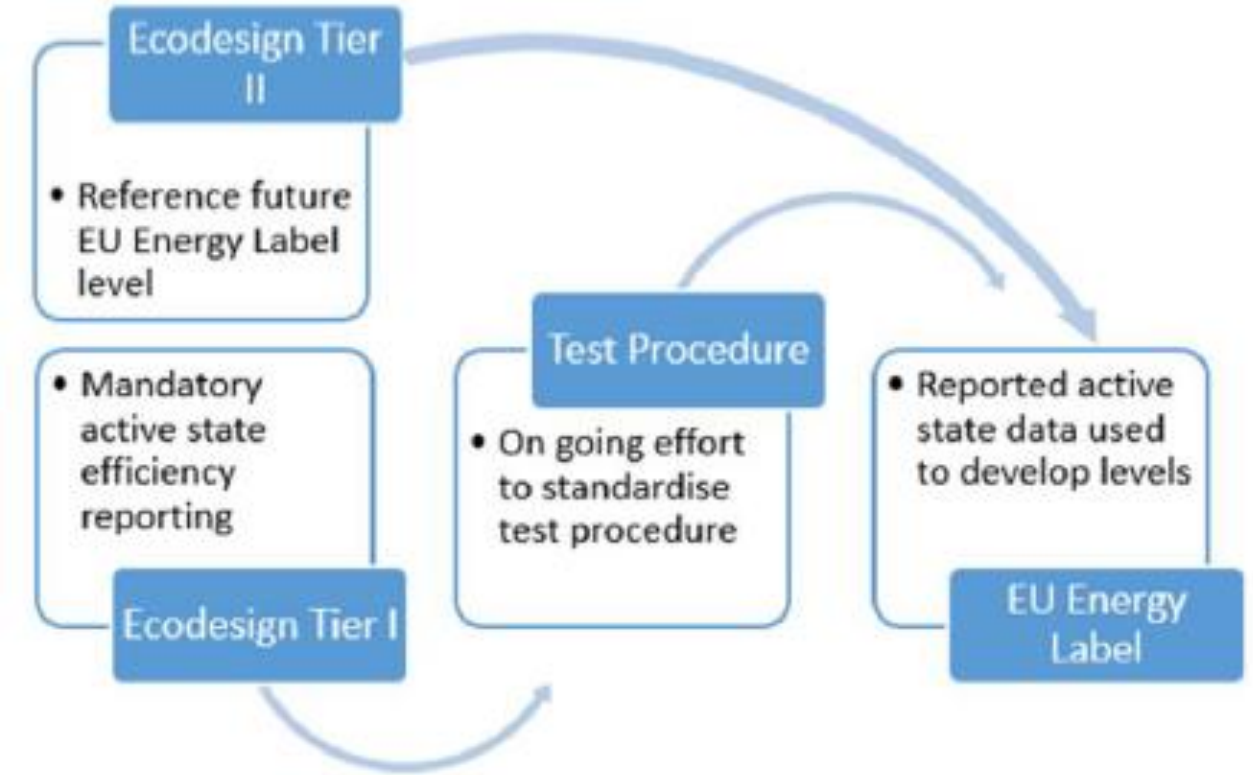
PRESENTATION OF POLICY OPTIONS

Policy option	Description of policy option
Option 3 – Ecodesign and energy label	**<u>Combination of ecodesign and energy labelling policy measures</u>** a to d – Same as option 2 e. Information requirements on reporting active state power demand New energy labelling requirements, with varying energy classes according to: f. ETEC limits g. Low power mode requirements h. Power management requirements i. IPS efficiency requirements j. A review clause will be written identifying that active state power demands will be included in a revised Energy Labelling Regulation on computers.

PRESENTATION OF POLICY OPTIONS

Policy option	Description of policy option
Option 4 – Ecodesign and energy label including active state	**<u>Combination of ecodesign and energy labelling policy measures</u>** Reviewed ecodesign: <u>Tier I</u>: a. Option 3 (only ecodesign requirements). <u>Tier II:</u> b. Amending ecodesign requirements, where products shall comply with an energy label level (e.g. Class 'C') which includes active state (see below) New energy labelling requirements: c. Energy labelling regulation based on ETEC ranges and active state power demand

COMBINED POLICY OPTIONS: ECODESIGN & ENERGY LABEL



TIMELINE OF POLICY OPTIONS

Option 1	Option 2	Option 3	Option 4		
BAU	Ecodesign	Ecodesign & Energy label	Ecodesign & Energy label		
No action	a-d	Ecodesign Energy labelling	Ecodesign: Tier I	Ecodesign: Tier II	Energy label
2016	Aug-18	Aug-18	Aug-18	Aug-21	Jul-20

SUGGESTED REQUIREMENTS

- Ecodesign requirements – options 2, 3 & 4
  Base allowances

Product Type	Category	Base Allowance (kWh/year)
Desktop & Integrated Desktop	0	40
	I1	75
	I2	85
	I3	
	D1	
	D2	
Notebook	0	10
	I1	12
	I2	15
	I3	20
	D1	
	D2	40

SUGGESTED REQUIREMENTS

- Ecodesign requirements – options 2, 3 & 4
  Functional adders

Functional Adder Allowances		Desktop, Integrated Desktop & Notebook	
Random Access Memory (RAM) (kWh/year) Where "C" is the total amount of installed RAM in GB		4 + 0.15 * C	
Additional storage device allowance beyond the main storage device (kWh/year)	3.5" HDD	16.5	
	2.5" HDD	2.6	
	All other storage devices	0.5	
First discrete graphics card (dGfx) (kWh/year) Where "B" is the dGfx frame buffer bandwidth measured in GB/s		58.6*tanh(0.0038*B-0.137)+26.8	29.3*tanh(0.0038*B-0.137)+13.4
Integrated Display allowance (kWh/year) Where: "A" is the display area measured in dm^2 "EP" is an allowance of (0.65) for Enhanced Performance Displays with a colour gamut support of 38.4% of CIELUV or greater (99% or more of defined		8.76 * 0.35 * (1 + EP) * ((21 * tanh(0.02 + 0.06 * (A-15)) + 5.5) + 10)	8.76 * 0.3 * (1 + EP) * ((10 * tanh(0.02 + 0.075 * (A-11)) + 2.5) + 4.5)

SUGGESTED REQUIREMENTS

- Ecodesign requirements – options 2, 3 & 4
  IPS requirements

Desktop computers, integrated desktop computers, notebook computers, workstations, small-scale servers, external graphics adapters and docking stations	Internal Power Supply Efficiency				
	Rated Power Output (W)	10% Load	20% Load	50% Load	100% Load
	<450W	80%	86%	88%	86%
	450W to	82%	87%	89%	87%
	≥ 600W	84%	89%	90%	87%
	power factor = 0.9 at 100 % of rated output power. Internal power supplies with a maximum rated output power of less than 75 W are exempt from the power factor requirement.				

SUGGESTED REQUIREMENTS

- Ecodesign requirements – Power Management

Power Management Enabling	
Desktop computers, integrated desktop computers, notebook computers, mobile workstation computers, portable-all-in-one computers and workstation computers.	Computers shall offer a power management function, or a similar function which, when the computer is not providing the main function or when other energy-using products are not dependent on its functions, automatically switches the computer into a power mode that has a lower power demand than sleep mode or the alternative low power state used when determining measured TEC.
	The computer shall reduce the speed of any active 1 Gigabit per second (Gb/s) (or above) Ethernet network links when transitioning to sleep or off-with-WOL mode.
	When in sleep mode, the response to 'wake events', such as those via network connections or user interface devices, should happen with a latency of ≤ 5 seconds from the initiation of a wake event to the system becoming fully usable including rendering of display.
	For products where an alternative low power mode condition, other than sleep, hibernate or off mode, is used when determining TEC, the response to 'wake events' from that alternative low power condition should happen with a latency of ≤ 1 second from the initiation of a wake event to the system becoming fully usable including rendering of display.

SUGGESTED REQUIREMENTS

- Ecodesign requirements – Power Management (cont.)

Power Management Enabling	
Desktop computers, integrated desktop computers, notebook computers, mobile workstation computers, portable-all-in-one computers and workstation computers.	The computer shall be placed on the market with the display sleep mode set to activate within 10 minutes of user inactivity.
	A computer with Ethernet capability shall have the ability to enable and disable a WOL function, if available, for sleep mode. A computer with Ethernet capability shall have the ability to enable and disable WOL for off mode if WOL from off mode is supported.
	Where a distinct sleep mode exists, the mode shall be set to activate within 30 minutes of user inactivity. This power management function shall be activated before placing the product on the market.
	Where an alternative low power mode, other than sleep, hibernate or off mode, is used, the mode shall be set to activate within 5 minutes of user inactivity. This power management function shall be activated before placing the product on the market.
	Users shall be able to easily activate and deactivate any wireless network connection(s) and users shall be given a clear indication with a symbol, light or equivalent, when wireless network connection(s) have been activated or deactivated.

SUGGESTED REQUIREMENTS

- EU Energy Label (policy option 3)

	Desktop, Integrated Desktop & Notebook Computers	
EU Energy Label Level	**Energy-in-Use Requirements (kWh/year)**	**Compliance Rate in the ENERGY STAR v7.0 Dataset**
A	Energy requirements to reflect compliance rate at - >	5%
B		10%
C	Equivalent to ENERGY STAR v7.0 (on completion of specification development)	25%
D	Energy requirements to reflect compliance rate at - >	40%
E		55%
F		70%
G		85%

QUESTIONS?

SUGGESTED MATERIAL EFFICIENCY POLICY OPTIONS & REQUIREMENTS

SUMMARY

#	Policy options	
1	Provision of information on battery durability for mobile personal computers	Resource savings
2	Extension of battery pack lifetime via software for mobile personal computers	
3	Labelling of information on external power supply specifications in personal computer packaging	
4	Provision of information on repair and replacement of components of personal computers	Reuse / Repair
5	Logos to identify the ease of replacing of batteries in mobile personal computers	
6	Data sanitisation (personal data cleaning tools)	
7	Provision of information on design for dismantling, recycling and recovery of personal computers	Recycling
8	Provision of information on plastic parts in personal computers containing flame retardants	
9	Marking of plastic parts in personal computers	
10	Labelling of batteries in mobile personal computers	
11	Provision of information on the content of Critical Raw Materials in personal computers	

MATERIAL EFFICIENCY POLICY OPTION 1

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Option #1: Provision of information on battery durability

From xx.xx.20xx manufacturers shall test the battery in accordance with the most recent version of the standard EN 61960.

Manufacturers shall communicate in the user's manual and on a free-access website the remaining full charge capacity of the battery compared to the initial charge capacity, after 500 charge/discharge cycles.

MATERIAL EFFICIENCY POLICY OPTION 2

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Option #2: Extension of battery pack lifetime via software

From xx.xx.20xx manufacturers shall make available on a free-access website and pre-installed on the notebook a battery optimisation software for users to enable a limit on the state of charge (SoC) in grid operation.

i. Such a software shall enable the user to limit the state of charge of the battery to 70 % or less compared to the available full charge capacity.

ii. The option to enable and disable the cap on SoC shall be available in the notebook and it has to be accessible to the user.

[...]

MATERIAL EFFICIENCY POLICY OPTION 2

Option #2: Extension of battery pack lifetime via software

[…]

iii. The manufacturer shall inform in the user's manual of the existence and the benefits of using such a software.

iv. An automatic message shall be implemented to remind the user to activate the limit on SoC if the notebook is used in grid operation at full charge for more than two hours.

MATERIAL EFFICIENCY POLICY OPTION 3

Option #3: Labelling of information on EPS specifications in personal computer packaging

From xx xx 20xx manufacturers shall label the packaging of personal computers that use an external power supply with the required power supply specifications (voltage, current and rated output power).

The label shall indicate the presence or absence of the external power supply within the packaging.

[…]

MATERIAL EFFICIENCY POLICY OPTION 3

Option #3: Labelling of information on EPS specifications in personal computer packaging

[…]

i. In case of presence of the external power supply, the label shall notify the users about the possibility to use the contained external power supply with other devices, compatibly with the external power supply specifications. The label shall also notify the type of connector used as interface between the external power supply and the devices.

ii. In case of absence of the external power supply, the label shall notify the users about the possibility to use an alternative suitable external power supply, which meets the external power supply specifications. The label shall also notify the type of connector required to interface the external power supply with the device.

MATERIAL EFFICIENCY POLICY OPTION 4

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Option #4: Provision of information on repair and replacement of components

From xx xx 20xx manufacturers shall ensure that the following components of computers (if present) can be disassembled (accessed and extracted), replaced and re-assembled:

i. For notebooks and desktop computers: batteries, internal power supply units, display, mass storage systems, memories, keyboard, track pad, network interface board, wireless LAN board;
ii. For tablets: batteries, display;

The ease of repair and replacement shall be ensured by documenting the sequence of disassembly, replacement and re-assembly operations needed for each of the components above (if present), including: […]

MATERIAL EFFICIENCY POLICY OPTION 4

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Option #4: Provision of information on repair and replacement of components

[…]
i. the exploded diagram of the product showing the location of the component(s);
ii. for each of these disassembly, replacement and re-assembly operations, documentation of the type and number of fastening technique(s) to be locked and unlocked and of the tool(s) required;
iii. information about diagnostics and testing hardware and software (if needed);
iv. information about recommended software or firmware required for the correct functioning of the computer;
v. information about the safety requirements and risks related to each disassembly, replacement and re-assembly operation.
Repair instructions shall be provided to professional repairers and made available in free-access website. Manufacturers shall also provide in the user's manual the contact details about servicing of the computer and authorised repairers.

MATERIAL EFFICIENCY POLICY OPTION 5

Option #5: Provision of information on ease of replacing of batteries

From xx xx 20xx manufacturers of portable computers that use one or more battery packs shall use the following logos.
i. Logo 1: identifies that the batteries of the portable computer can be manually disassembled and replaced by the user, without the need of tools. Instructions on how to disassemble and replace the battery is provided in the user manual;
ii. Logo 2: identifies that the batteries of the portable computer can be disassembled and replaced by the user, with the use of tools. Instructions on how to disassemble and replace the battery is provided in the user manual;
iii. Logo 3: identifies that the batteries of the portable computer cannot be disassembled and replaced by the user but it requires assistance. The user manual shall mention "The battery contained in this product cannot be replaced by the end-user, but by professionals". Instructions on how to contact the customer service is provided in the user manual.

MATERIAL EFFICIENCY POLICY OPTION 6

Option #6: Data sanitisation

From xx xx 20xx manufacturers shall ensure that users can permanently delete their personal data contained in storage systems.

i. *Data sanitisation shall be ensured by means of a function/data sanitizing software, either provided by manufacturers on free-access websites, or pre-installed on personal computers;*
ii. *Such a function/ data sanitizing software shall permanently delete all user data without compromising the functioning of the device for further use.*

MATERIAL EFFICIENCY POLICY OPTION 7

Option #7: Provision of information on design for dismantling, recycling and recovery

1. Design for dismantling
From xx xx 20xx manufacturers shall ensure that welding or glueing (other than through the use of adhesive tape for batteries) are not used as joining or sealing techniques for the following components (if present):

- *batteries;*
- *PCB assemblies larger than 0.1 dm^2;*
- *LCDs panels larger than 1 dm^2;*
- *any mercury containing component;*
- *capacitors containing electrolyte or polychlorinated biphenyls; and PMMA boards, storage systems (solid state drives - SSDs – and hard disk drives –HDDs) and optical disk drives (ODDs).*

Accessing components shall be ensured by documenting the sequence of 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.

MATERIAL EFFICIENCY POLICY OPTION 7

Option #7: Provision of information on design for dismantling, recycling and recovery

2. Provision of information
Manufacturers shall provide recyclers with information relevant for dismantling, recycling and/or recovery at end-of-life including at least the following:
(a) a diagram of the product showing the location of the components above indicated, when present;
(b) instructions on the sequence of operations needed to remove these components, including type and number of fastening techniques to be unlocked and tool(s) required;
(c) if the product contains cadmium, lead, arsenic, mercury or their compounds: the indication of the specific substance(s), the location of all component(s) containing each, its quantity (as X,X mg), and the advised recycling techniques, if any, to be applied.

This information shall be available on a website.

MATERIAL EFFICIENCY POLICY OPTION 8

Option #8: Provision of information on plastic parts in personal computers containing flame retardants

If plastic parts (other than PCB assemblies and cables) containing flame retardants are used, manufacturers shall provide in a website documentation in the format of the following table.

Table I - 'Flame retardant in plastic parts' index.
(All masses shall be expressed in grams)
[...]

MATERIAL EFFICIENCY POLICY OPTION 8

Option #8: Provision of information on plastic parts in personal computers containing flame retardants

Brand name and Product family:			
Part reference	**Polymer***	**Flame retardant****	**Mass (g)**
Reference *(1)*	…	…	…
Reference *(2)*	…	…	…
…	…	…	…
Reference *(j)*	…	…	…
A) Overall mass of plastic parts*** incorporated in the computer that contain flame retardants ***(g)***			…
B) Overall mass of plastic parts*** incorporated in the computer ***(g)***			…
C) Total mass of the computer ***(g)***			…
			Index (%)
Ratio of plastic containing flame retardants to the total mass of plastic (A / B)			…
Ratio of plastic containing flame retardants to the total mass of computer (A / C)			…

* standard abbreviated term for the polymer(s)

** standard code number of the flame retardant(s)

*** PCB assemblies and cables are excluded

MATERIAL EFFICIENCY POLICY OPTION 9

Option #9: Marking of plastic parts

Plastic parts heavier than 50 g,
1. Shall be marked by specifying the type of plastic using standardised symbols. The marking shall be legible.

Plastic parts in the following circumstances are exempted from marking requirements:

i. the marking is not possible because of the shape or size;
ii. the marking would impact on the performance or functionality of the plastic part;
iii. marking is technically not possible because of the molding method.
[...]

MATERIAL EFFICIENCY POLICY OPTION 9

Option #9: Marking of plastic parts

[...]
For the following plastic parts no marking is required:

- *packaging, tape and stretch wraps;*
- *labels, wiring and cables;*
- *PCB assemblies, PMMAs, optical components, electrostatic discharge components, electromagnetic interference components.*

2. If flame retardants are present, they shall be marked, using standardised symbols, as following:
>x-FR-y<
where:
x= plastic polymer
FR = flame retardant
y= type of the flame retardant coding

For exempted plastic parts, the market surveillance authority shall check that a justification is provided by the manufacturers in the end-of-life documentation.

MATERIAL EFFICIENCY POLICY OPTION 10

Option #10: Labelling of batteries

From XX.XX.20XX battery packs and cells (including those incorporated into battery packs) shall be labelled with the "Battery Recycle" Logo.

The logo shall be visible, durable, legible and indelible. For lithium-ion batteries, a two-digit code shall be added to indicate the content of specific metals as well as substances hindering recycling.

MATERIAL EFFICIENCY POLICY OPTION 11

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Option #11: Provision of information on critical raw materials

From XX.XX.20XX manufacturers shall provide information of the weight per product of the following critical raw materials, if any, and indication of the components in which the following critical raw materials are present:

- *Cobalt, expressed in grams rounded to the nearest integer;*
- *Neodymium, expressed in grams rounded to the nearest integer;*
- *Palladium, expressed in grams to one decimal place.*

This information shall be available on a website.

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