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EUROPEAN COMMISSION

Brussels,
D009812/03

Draft

COMMISSION DECISION

of

on establishing the ecological criteria for the award of the EU Ecolabel for Personal Computers

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COMMISSION DECISION

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THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel¹, and in particular Article 8(2) thereof,

After consulting the European Union Eco-labelling Board,

Whereas:

- (1) Under Regulation (EC) No 66/2010, the EU Ecolabel may be awarded to those products with a reduced environmental impact during their entire life cycle.
- (2) Regulation (EC) No 66/2010 provides that specific EU Ecolabel criteria are to be established according to product groups.
- (3) Commission Decision 2001/686/EC² has established ecological criteria and the related assessment and verification requirements for personal computers. Following the review of the criteria set out in that Decision, Commission Decision 2005/341/EC³ has established revised criteria which are valid until 30 June 2011.
- (4) Those criteria have been further reviewed in the light of technological developments. In addition, in 2006, the agreement between the Government of the United States of America and the European Community (hereinafter: the Agreement), approved by Council Decision 2006/1005/EC⁴, as amended by Decision 2010/C 186/1 of 12 August 2009 of the Management entities under the Agreement between the Government of the United States of America and the European Community on the coordination of energy-efficiency labelling programmes for office equipment on the revision of the computer specifications in Annex C, part VIII, to the Agreement (hereinafter: Energy Star v5.0)⁵ was concluded setting out the criteria for Energy Star.

¹ OJ L 27, 30.1.2010, p. 1.

² OJ L 242, 12.9. 2001, p 4.

³ OJ L 115, 4.5.2005, p. 1.

⁴ OJ L 381, 28.12.2006, p.1

⁵ OJ C 186, 9.7.2010, p. 1

- (5) Those new criteria, as well as the related assessment and verification requirements, should be valid for three years from the date of adoption of this Decision.
- (6) Decision 2005/341/EC should be replaced for reasons of clarity.

HAS ADOPTED THIS DECISION:

Article 1

The product group 'Personal Computers' shall comprise: Desktop computers, Integrated desktop computers, Thin clients, Displays and Keyboards (as a stand alone item) as defined in Article 2.

Notebook computers, Small-scale servers, Workstations, gaming consoles and digital picture frames shall not be considered personal computers for the purpose of this Decision.

Article 2

For the purpose of this Decision, the following definitions shall apply:

(1) *Computer* means a device which performs logical operations and processes data, is capable of using input devices and computer displays, and includes a central processing unit (CPU) to perform operations. For the purpose of this Decision, computers shall only include stationary units, including desktop computers, integrated desktop computers and thin clients.

If a computer, on shipment, includes a monitor, a key board or any other input device these must also comply with the criteria. Keyboards and displays can also apply as a stand alone item.

(2) *Computer display* means a display screen and its associated electronics encased in a single housing, or within the computer housing (e.g. integrated desktop computer), that is capable of displaying output information from a computer via one or more inputs, such as a VGA, DVI, Display Port, and/or IEEE 1394. Examples of computer display technologies are the cathode-ray tube (CRT) and liquid crystal display (LCD).

(3) *Keyboard* means a data input device which uses an arrangement of push-buttons, which can be used to insert discrete data into a computer.

(4) *External Power Supply* means a component contained in a separate physical enclosure external to the computer casing and designed to convert line voltage AC input from the mains to lower DC voltage(s) for the purpose of powering the computer. An external power supply must connect to the computer via a removable or hard-wired male/female electrical connection, cable, cord or other wiring.

(5) *Internal Power Supply* means a component internal to the computer casing and designed to convert AC voltage from the mains to DC voltage(s) for the purpose of powering the computer components. For the purposes of this definition, an internal power supply must be contained within the computer casing but shall be separate from the main computer board. The power supply must connect to the mains through a single cable with no intermediate circuitry between the power supply and the mains power. In addition, all power connections

from the power supply to the computer components, with the exception of a DC connection to a computer display in an Integrated Desktop Computer, must be internal to the computer casing (i.e., no external cables running from the power supply to the computer or individual components). Internal DC-to-DC converters used to convert a single DC voltage from an external power supply into multiple voltages for use by the computer are not considered internal power supplies.

(6) *Desktop Computer* means a computer where the main unit is intended to be located in a permanent location, often on a desk or on the floor. Desktops are not designed for portability and utilise an external computer display, keyboard, and mouse. Desktops are designed for a broad range of home and office applications.

(7) *Integrated Desktop Computer* means a desktop system in which the computer and computer display function as a single unit which receives its AC power through a single cable. Integrated desktop computers come in one of two possible forms: (1) a system where the computer display and computer are physically combined into a single unit; or (2) a system packaged as a single system where the computer display is separate but is connected to the main chassis by a DC power cord and both the computer and computer display are powered from a single power supply. As a subset of desktop computers, integrated desktop computers are typically designed to provide similar functionality as desktop systems.

(8) *Thin Client* means an independently-powered computer that relies on a connection to remote computing resources to obtain primary functionality. Main computing (e.g., programme execution, data storage, interaction with other Internet resources, etc.) takes place using the remote computing resources. Thin Clients covered by this definition are limited to devices with no rotational storage media integral to the computer. The main unit of a Thin Client covered by this definition must be intended for location in a permanent location (e.g. on a desk) and not for portability.

(9) *Discrete Graphics Processing Unit (GPU)*: A graphics processor with a local memory controller interface and a local, graphics-specific memory.

Article 3

In order to be awarded the EU Ecolabel under Regulation (EC) No 66/2010, an item must fall within the product group 'Personal Computers' as defined in Article 1 of this Decision and must comply with the ecological criteria as well as the related assessment and verification requirements, set out in the Annex to this Decision.

Article 4

The criteria for the product group 'Personal Computers' as well as the related assessment and verification requirements, shall be valid for three years from the date of adoption of this Decision.

Article 5

For administrative purposes the code number assigned to the product group 'Personal Computers' shall be '013'.

Article 6

Decision 2005/341/EC is repealed.

Article 7

1. By derogation from Article 6, applications for the EU Ecolabel for products falling within the product group "Personal Computers" submitted before the date of adoption of this Decision shall be evaluated in accordance with the conditions laid down in Decision 2005/341/EC.
2. Applications for the EU Ecolabel for products falling within the product group "Personal Computers" submitted from the date of adoption of this Decision but by 30 June 2011 at the latest may be based either on the criteria set out in Decision 2005/341/EC or on the criteria set out in this Decision.

Those applications shall be evaluated in accordance with the criteria on which they are based.

3. Where the Ecolabel is awarded on the basis of an application evaluated in accordance with the criteria set out in Decision 2005/341/EC, that Ecolabel may be used for 12 months from the date of adoption of this Decision.

Article 8

This Decision is addressed to the Member States.

Done at Brussels,

For the Commission
Janez POTOČNIK
Member of the Commission

ANNEX
FRAMEWORK

The aims of the criteria

The criteria aim at promoting reduction of environmental damage or risks related to the use of energy (global warming, acidification, depletion of non-renewable energy sources) by reducing energy consumption, reduction of environmental damage related to the use of natural resources and reduction of environmental damage related to the use of hazardous substances by reducing the use of such substances.

CRITERIA

For the purpose of Article 3, the criteria are set for the following aspects:

	Display	Keyboard	Personal Computer
Energy savings: Computer			X
Energy savings: display	X		X
Power management requirements	X		X
Power supplies: internal			X
No mercury in display backlights	X		X
Hazardous substances, mixtures, plastic parts	X	X	X
Noise			X
Recycled content	X	X	X
User instructions	X	X	X
Design for disassembly	X	X	X
Repairability	X		X
Lifetime extension			X
Packaging	X	X	X

Assessment and verification requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, it is understood that these may originate from the applicant and/or his supplier(s) and/or their supplier(s), et cetera, as appropriate.

Where possible, the testing should be performed by laboratories that meet the general requirements of EN ISO 17025 or equivalent. Where appropriate, test methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.

EU ECOLABEL CRITERIA

Criterion 1 - Energy Savings

(a) Energy savings for desk top computers, integrated desk top computers and thin clients

The energy efficiency performance of desk top and integrated desk top computers shall exceed the appropriate category energy efficiency requirements set out in the Agreement as amended by Decision 2010/C 186/1 (hereinafter: ENERGY STAR v5.0) by at least the following:

category A : 40%,

category B : 25%,

category C : 25%,

category D : 30%.

The energy efficiency performance of thin clients shall meet at least the energy efficiency requirements for thin clients set out by ENERGY STAR v5.0.

Capability adjustments allowed under the Agreement as amended by ENERGY STAR v5.0 may be applied at the same level, except in the case of discrete Graphics Processing Units (GPUs) where no additional allowance shall be given.

(b) Energy savings for computer displays

- i. The computer display's energy efficiency performance in active mode shall exceed the energy efficiency requirements set out in ENERGY STAR v5.0 by at least 30%.
- ii. Computer display sleep mode power must not exceed 1W.
- iii. Computer displays shall have an energy consumption in on-mode of $\leq 100W$ measured when set to maximum brightness.
- iv. Computer monitor off mode power shall not exceed 0.5W

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

Criterion 2 - Power Management

The computer shall comply with the following power management requirements⁶:

a) *Power Management Requirements*

Personal computers shall be shipped with the power management system enabled at the time of delivery to the customers. Power management settings shall be:

- i. 10 minutes to screen off (display sleep),
- ii. 30 minutes to computer sleep (system level S3, suspended to RAM)⁷.

b) Network Requirements for Power Management

- i. Personal computers with Ethernet capability shall have the ability to enable and disable Wake on LAN (WOL) for sleep mode.

c) Network Requirements for Power Management (applies to personal computers shipped through enterprise channels only)

- i. Personal computers with Ethernet capability must meet one of the following requirements⁸:
 - Be shipped with Wake On LAN enabled from the sleep mode when operating on AC power, or
 - Provide control to enable WOL that is sufficiently-accessible from both the client operating system user interface and over the network if computer is shipped to enterprise without WOL enabled;
- ii. Personal computers with Ethernet capability shall be capable of both remote (via network) and scheduled wake events from sleep mode (e.g. Real Time Clock). Manufacturers shall ensure, where the manufacturer has control (i.e. configured through hardware settings rather than software settings), that these settings can be managed centrally, as the client wishes, with tools provided by the manufacturer.

Assessment and verification: the applicant shall provide the competent body with a declaration to certify that the computer has been shipped in the power management settings stated above or better.

Criterion 3 – Internal Power Supplies

Internal power supplies shall meet at least the energy efficiency requirements for internal power supplies set out by ENERGY STAR v5.0.

⁶ As defined in ENERGY STAR v5.0 except for display sleep requirement

⁷ Not applicable to Thin Clients

⁸ Thin Clients – only applies if software updates from the centrally managed network are conducted while the unit is in sleep or off mode. Thin Clients whose standard framework for upgrading client software does not require off-hours scheduling are exempt from the requirement.

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

Criterion 4 - Mercury in Fluorescent Lamps

Mercury or its compounds shall not intentionally be added to the backlights of the computer display.

Assessment and verification: the applicant shall declare to the competent body that the backlights of the computer display do not contain more than 0.1 mg mercury or its compounds per lamp. The applicant shall also provide a brief description of the lighting system used.

Criterion 5 - Hazardous substances and mixtures

In accordance with Article 6(6) of Regulation (EC) No 66/2010, the product or any part of it shall not contain substances referred to in Article 57 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council nor substances or mixtures meeting the criteria for classification in the following hazard classes or categories in accordance with Regulation (EC) No 1272/2008.

List of hazard statements and risk phrases:

Hazard Statement¹	Risk Phrase²
H300 Fatal if swallowed	R28
H301 Toxic if swallowed	R25
H304 May be fatal if swallowed and enters airways	R65
H310 Fatal in contact with skin	R27
H311 Toxic in contact with skin	R24
H330 Fatal if inhaled	R23/26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R46
H341 Suspected of causing genetic defects	R68
H350 May cause cancer	R45
H350i May cause cancer by inhalation	R49
H351 Suspected of causing cancer	R40
H360F May damage fertility	R60

H360D May damage the unborn child	R61
H360FD May damage fertility. May damage the unborn child	R60/61/60-61
H360Fd May damage fertility. Suspected of damaging the unborn child	R60/63
H360Df May damage the unborn child. Suspected of damaging fertility	R61/62
H361f Suspected of damaging fertility	R62
H361d Suspected of damaging the unborn child	R63
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.	R62-63
H362 May cause harm to breast fed children	R64
H370 Causes damage to organs	R39/23/24/25/26/27/28
H371 May cause damage to organs	R68/20/21/22
H372 Causes damage to organs through prolonged or repeated exposure	R48/25/24/23
H373 May cause damage to organs through prolonged or repeated exposure	R48/20/21/22
H400 Very toxic to aquatic life	R50
H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long-lasting effects	R50-53
H411 Toxic to aquatic life with long-lasting effects	R51-53
H412 Harmful to aquatic life with long-lasting effects	R52-53
H413 May cause long-lasting effects to aquatic life	R53
EUH059 Hazardous to the ozone layer	R59
EUH029 Contact with water liberates toxic gas	R29

EUH031 Contact with acids liberates toxic gas	R31
EUH032 Contact with acids liberates very toxic gas	R32
EUH070 Toxic by eye contact	R39-41

¹ As provided for in Regulation (EC) No 1272/2008 of the European Parliament and of the Council

² As provided for in Council Directive 67/548/EEC

The use of substances or mixtures which change their properties upon processing (e.g., become no longer bioavailable, undergo chemical modification) so that the identified hazard no longer applies is exempted from the above requirement.

Concentration limits for substances or mixtures meeting the criteria for classification in the hazard classes or categories listed in the table above, and for substances meeting the criteria of Article 57(a), (b) or (c) of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008. Where specific concentration limits are determined, they should prevail over the generic ones.

Concentration limits for substances meeting criteria of Article 57(d), (e) or (f) of Regulation (EC) No 1907/2006 shall not exceed 0.1% weight by weight.

The following substances/uses of substances are specifically derogated from this requirement:

<i>Homogenous parts with weight below 10 g</i>	<i>All hazard statements and risk phrases listed above</i>
<i>Nickel in stainless steel</i>	

Assessment and verification: For each part above 10g the applicant shall provide a declaration of compliance with this criterion, together with related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006 for substances and mixtures.

Criterion 6 - Substances listed in accordance with Article 59(1) of Regulation (EC) No 1907/2006

No derogation from the exclusion in Article 6(6) may be given concerning substances identified as substances of very high concern and included in the list foreseen in Article 59 of Regulation (EC) No 1907/2006, present in mixtures, in an article or in any homogenous part of a complex article in concentrations higher than 0.1%. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008 shall apply in case it is lower than 0.1%.

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

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

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

The applicant shall provide a declaration of compliance with this criterion, together with related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006 for substances and mixtures.

Criterion 7 – Plastic parts

- (a) If any plasticizer substance in the manufacturing process is applied, it must comply with the requirements on hazardous substances set out in Criteria 5 and 6.

Additionally DNOP (di-n-octyl phthalate), DINP (di-isononyl phthalate), DIDP (diisodecyl phthalate) shall not intentionally be added to the product.

- (b) Plastic parts shall not contain a chlorine content greater than 50% by weight.
- (c) Only biocidal products containing biocidal active substances included in Annex IA to Directive 98/8/EC of the European Parliament and of the Council⁹, and authorised for use in computers, shall be allowed for use.

Assessment and verification: a certificate signed by the manufacturer declaring compliance with these requirements shall be submitted to the awarding competent body. A declaration of compliance signed by the plastic and biocides suppliers and copies of relevant safety data sheets about materials and substances shall also be provided to the awarding competent body. All biocides used shall be clearly indicated.

Criterion 8 - Noise

The ‘Declared A-weighted Sound Power Level’ (re 1 pW) of the personal computer system unit, in accordance with paragraph 3.2.5 of ISO 9296, shall not exceed:

- 40 dB (A) in the idle operating mode,
- 45 dB (A) when accessing a hard-disk drive.

Assessment and verification: the applicant shall provide the competent body with a report, certifying that the levels of noise emissions have been measured in accordance with ISO 7779 and declared in accordance with ISO 9296. The report shall state the measured levels of noise emissions in both the idle operating mode and when accessing a disk drive, which shall be declared in accordance with paragraph 3.2.5 of ISO 9296.

⁹ OJ L 123, 24.4.1998, p. 1

Criterion 9 - Recycled Content

The external plastic case of the system unit, monitor and keyboard shall have a post consumer recycled content of not less than 10% by mass.

Assessment and verification: the applicant shall provide the competent body with a declaration stating the percentage post consumer recycled content.

Criterion 10 - User instructions

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

- (a) Energy consumption: TEC value in accordance with ENERGY STAR v5.0, as well as the maximum power demand in each operating mode. In addition, instructions must be provided on how to use the devices energy-saving mode.
- (b) Information that energy efficiency cuts energy consumption and thus saves money by reducing electricity bills and that unplugging your personal computer or computer display reduces energy consumption to zero.
- (c) The following indications on how to reduce power consumption when the personal computer and/or computer display are not being used:
 - i. Putting the personal computer and/or computer display into off mode will reduce energy consumption but will still draw some power.
 - ii. Reducing the brightness of the screen will reduce energy use
 - iii. Running the disk fragmentation on the computer will reduce energy use and increase the life of your personal computer (this is not applicable to Solid State Device machines).
 - iv. Screen savers can stop personal computer monitors from powering down into a lower power mode when not in use. Ensuring that screen savers are not activated on computer monitors can therefore reduce energy use.
- (d) Information should be included in the user instructions or the manufacturer's website to let the user know where to go to obtain professional repairs and servicing of the personal computer and/or computer display, including contact details as appropriate.
- (e) End-of-life instructions for the proper disposal of personal computers and/or computer displays at civic amenity sites or through retailer take-back schemes as applicable, which shall comply with Directive 2002/96/EC¹⁰.

¹⁰ OJ L 37, 13.02.2003, p.24.

- (f) Information that the product has been awarded the EU Ecolabel with a brief explanation as to what this means together with an indication that more information on the Ecolabel can be found at the website address <http://www.ecolabel.eu>
- (g) Any instruction/repair manual(s) should contain recycled content and should not contain chlorine bleached paper.

Assessment and verification: *the applicant shall declare compliance of the product with these requirements and shall provide a copy of the instruction manual to the competent body. These User Instructions should then be pre-loaded onto the computer for the user to read and available for access on the manufacturers website.*

Criterion 11 - User Reparability

The applicant shall provide clear instructions to the end-user in the form of a manual (in hard or soft copy) to enable basic repairs to be undertaken. The applicant shall also ensure that spare parts are available for at least five years from the end of production of the personal computer and/or computer monitor.

Assessment and verification: *the applicant shall declare the compliance of the product with these requirements to the competent body together with a copy of the repair manual.*

Criterion 12 - Design for disassembly

The manufacturer shall demonstrate that the personal computer/monitor can be easily dismantled by professionally trained personnel using the tools usually available to them, for the purpose of undertaking repairs and replacements of worn-out parts, upgrading older or obsolete parts, and separating parts and materials, ultimately for recycling or reuse.

To facilitate dismantling:

- (a) Fixtures within the personal computer shall allow for its disassembly, e.g. screws, snap-fixes, especially for parts containing hazardous substances.
- (b) Circuit boards, and/or other precious metal-containing components, shall be easily removable using manual separation methods both from the product as a whole and from specific components (such as drives) that contain such boards to enhance recovery of high value material.
- (c) All plastic materials in covers/housing shall have no surface coatings incompatible with recycling or reuse.
- (d) Plastic parts shall be of one polymer or be of compatible polymers for recycling and have the relevant ISO 11469 marking if greater than 25g in mass.
- (e) Metal inlays that cannot be separated shall not be used.
- (f) Data on the nature and amount of hazardous substances in the personal computer shall be gathered in accordance with Council Directive 2006/121/EC and the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Assessment and verification: a test report shall be submitted with the application detailing the dismantling of the personal computer. It shall include an exploded diagram of the personal computer labelling the main components as well as identifying any hazardous substances in components. It can be in written or audiovisual format. Information regarding hazardous substances shall be provided to the competent body in the form of a list of materials identifying material type, quantity used and location.

Criterion 13 - Lifetime extension

Personal computers shall have facilities that enable the following:

- i. Exchangeable and upgradeable memory and graphic cards,
- ii. Expansion capability: presence of at least four USB interfaces.

The Computer shall also be designed so that major components (including memory drives, CPUs and cards) can be exchanged and/or upgraded easily by the end-user. For example using snap, slide in/slide out or cartridge-style housing for components.

Assessment and verification: the applicant shall declare the product's compliance with these requirements to the competent body.

Criterion 14 - Packaging

Where cardboard boxes are used, they shall be made of, at least, 80% recycled material. Where plastic bags are used for the final packaging, they shall be made of, at least, 75% recycled material or they shall be biodegradable or compostable, in agreement with the definitions provided by the EN 13432.

Assessment and verification: a sample of the product packaging shall be provided on application, together with a corresponding declaration of compliance with this criterion. Only primary packaging, as defined in Directive 94/62/EC¹¹, is subject to the criterion.

Criterion 15 - Information appearing on the Ecolabel

Optional label with text box shall contain the following text:

- " High energy efficiency
- Designed to facilitate recycling, repair and upgrading
- Mercury free backlights (if computer displays)"

Assessment and verification: the applicant shall declare the compliance of the product with this requirement, and shall provide a copy of the Ecolabel as it will appear on the packaging and/or product and/or accompanying documentation to the competent body.

¹¹ OJ L 365, 31.12.1994, p.10.