

EU Ecolabel criteria for 'Personal, notebook and tablet computers'

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Joint Research Centre
the European Commission's
in-house science service

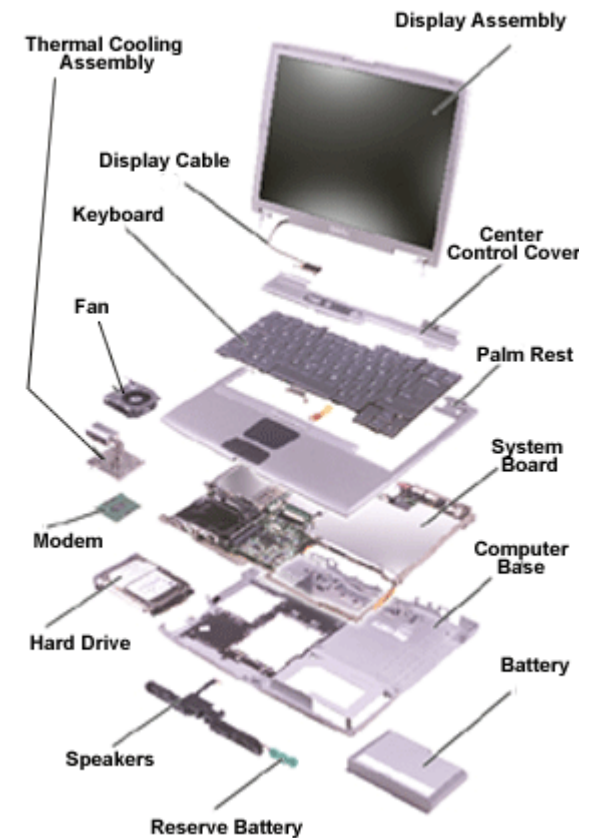


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Overview of the EU Ecolabel criteria

Commission Decision (EU) 2016/1371 of 10 August 2016 *'establishing the ecological criteria for the award of the EU Ecolabel for personal, notebook and tablet computers'*

1. Energy Consumption
2. Hazardous substances and mixtures in the product, sub-assemblies and component parts
3. Lifetime extension
4. Design, material selection and end-of-life management
5. Corporate Social Responsibility
6. User information



Scope of the criteria

Stationary computers

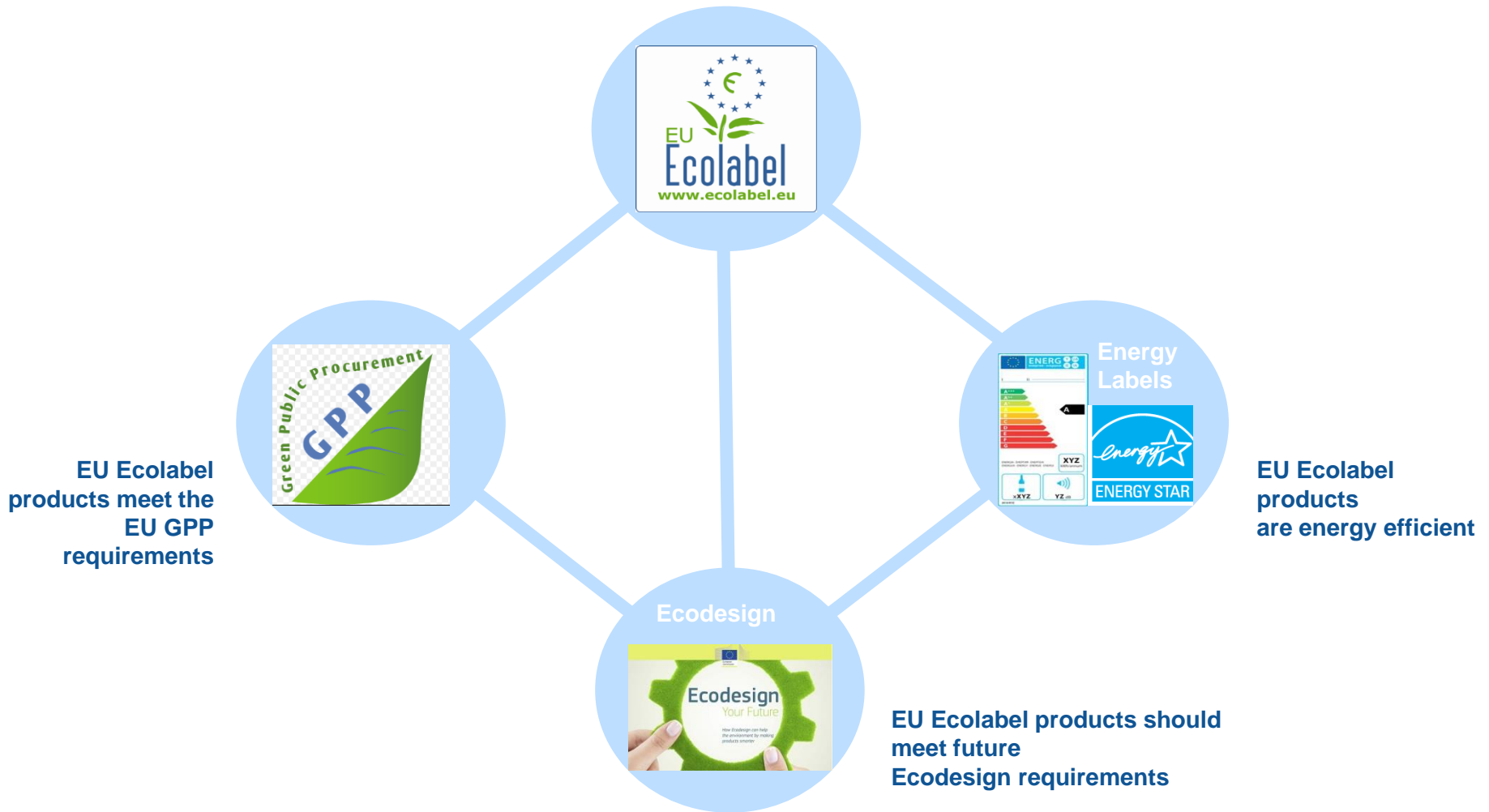
- ✓ Desktop Computers (*incl. Thin Clients*)
- ✓ Small-scale servers
- ✓ Workstations

Portable computers

- ✓ Portable All-In-One computers
- ✓ Notebook Computers (*including 'subnotebooks'*)
- ✓ Two-In-One notebooks
- ✓ Tablet Computers
- ✓ Mobile Thin Clients



Synergies with EU product policy



EU Green Public Procurement (GPP) criteria **Making the link**

An EU Ecolabelled product automatically meets the EU GPP criteria and therefore ticks the box for procurers:

'Products holding the EU Ecolabel for personal, notebook and tablet computers or another relevant Type 1 Eco-label fulfilling the specified requirements will be deemed to comply.'

DG Environment GPP website

http://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm

(a) Total energy consumption of the computer

Rationale: Reduction in use phase (sleep + idle) electricity consumption by 47 – 64% compared to Energy Star v5.0 (desktops)

Requirement: Meet or exceed E_{TEC_MAX} value

Reference or equivalent standards: Energy Star v6.1 EU *or* USA (= EU input power requirements or EU test report); IEC 62623; ECMA 383

Verification documentation: Energy Star v6.1 test report

(b) Power management

Rationale: Sensitise users to the disabling of power management functions

Requirement: Show that warning messages communicate when default functions will be disabled.

Reference or equivalent standards: *not applicable*

Verification documentation: Description from product user manual; Screen shots of warning messages

(c) Graphics capabilities

Rationale: Stricter cap on additional power consumption of models with discrete graphics cards (dGfx)

Requirement:

- Use of stricter 'functional adder' allowances (TEC_{graphics}) when calculating the Energy Star v6.1 E_{TEC_MAX}
- Power management to shut down GPU in long idle state

Reference of equivalent standards: same as for criterion 1(a)
IEC 62623; ECMA 383

Verification documentation: Energy Star v6.1 test report

(d) Internal power supplies

Rationale: Reduce use phase electricity consumption in active as well as sleep and short/long idle modes

Requirement:

- Qualify for Energy Star v6.1 TEC_{PSU} allowance
- Minimum stipulated efficiencies at 10%, 20%, 50% and 100% of rated power output.

Reference or equivalent standards: same as for criterion 1(a); see *also* 80Plus 'Gold' standard.

Verification documentation: Energy Star v6.1 test report; independent power supply performance certifications.

(e) Enhance performance displays

Rationale: Minimise increased electricity consumption associated with enhanced performance displays (up to 30%)

Requirement: Displays qualifying for $TEC_{INT_DISPLAY}$ shall have Automatic Brightness Control (ABC) installed as a default setting

Reference or equivalent standards: Validation procedure in Energy Star v5.0 Displays

Verification documentation: Test report



(a) Restrictions on Substances of Very High Concern (SVHCs)

Rationale: Control the presence of those hazardous substances of very high concern in the EU

Requirement: Ensure that REACH Candidate List substances are not present in EU Ecolabelled computers at concentrations $>1.0\%$

Reference or equivalent standards: Green Screen
(Benchmark 1 substances)

Verification documentation: REACH Article 33 notifications for the whole product and for the listed sub-assemblies and component parts. May be based on pre-screening using IEC 62474 'declarable substance list'



(b) Restrictions on the presence of specific hazardous substances

Rationale: Control the presence of specific hazardous substances of concern in sub-assemblies and component parts

Requirement: Specific restrictions applying to:

- i) lead and cadmium solder and contacts;
- ii) organotin stabiliser compounds, colourants and Polycyclic Aromatic Hydrocarbons (PAHs) in polymers;
- iii) the use of biocides to provide an anti-bacterial function;
- iv) mercury in backlights, and;
- v) arsenic and its compounds in display and track pad glass.

Reference or equivalent standards: IEC 62321-5 (RoHS); AfPS GS 2014:01 PAK; TCO

Verification documentation: Test reports and sub-assembly/component part supplier declarations



(c) Restrictions based on CLP hazard classifications

Rationale:

- Support the use of safer alternatives for fire protection and plasticising agents
- Identify hazards associated with steel additives and coatings, and rechargeable battery cathode materials, solvents and salts.

Requirement: demonstrate safer CLP/GHS classifications for the flame retardants and plasticisers used in:

- main printed circuit board (Group 3)
 - external AC and DC power cords (Group 3)
 - external plastic casings and bezels (Group 2 or 3)
 - miscellaneous subassemblies and parts (Group 3)
- + compliant PCB and cable fire test results for '*halogen free*' claims



(c) Restrictions based on CLP hazard classifications

Reference or equivalent standards:

- Substances assessed as Green Screen Benchmarks 2, 3 and 4 (*may have been carried out for TCO, EPEAT*)
- CAS No/REACH registration, SDS, Governmental or independent hazard assessments (e.g. US EPA)
- Fire test results (*if required*: ISO 5660/ IEC 60754-1/ISO 19700)

Verification documentation: Sub-assembly supplier declarations supported by CAS No/REACH registration; SDS; Governmental or independent hazard assessments



3. Lifetime extension

(a) Durability testing for portable computers

Rationale: Products are more resilient to the most common environmental stresses and accidents *'in the field'*

Requirement:

- Three mandatory tests for notebooks – shock, vibration and drop – two for tablets – drop and screen resilience.
- Notebooks to choose at least one additional test – temperature, screen resilience, water spill, keyboard, screen hinge.

Reference or equivalent standards: IEC 60068 series; IEC 60529 (IP); MIL810G (USA)

Verification documentation: Third party verified test report (existing or new, in-house or external)



(b) Rechargeable battery quality and lifetime

Rationale: Longer lasting and better performing batteries, especially for products where the battery is not easy to change.

Requirements:

- a minimum, benchmarked battery life of 7 hours;
- Battery or cell charging cycle performance retaining 80% of declared minimum capacity after 750 or 1000 cycles;
- two year warranty for defects

Reference or equivalent standards: PCMark (home and consumer); MobileMark (business and enterprise); for tablets see UM; IEC 61960 (standard or accelerated procedure)

Verification documentation: Third party verified test report (battery or cell)



(c) Data storage drive reliability and protection

Rationale: Primary data storage that is reliable and more resilient to shock and vibration *'in the field'*.

Requirement:

- Annualised Failure or Bit Error Rate thresholds (*stationary computers*)
- Shock, retraction or solid state protection measures (*notebook computers*)

Reference or equivalent standards: *not specified.*

Verification documentation: Drive manufacturer/supplier specification. For shock and retraction an independently verified test report.



(d) Upgradeability and Repairability

Rationale: Support easier repair or replacement of worn out components or parts in the future.

Requirement:

- Ease of access/exchange for the six listed components;
- Step thresholds for rechargeable battery extraction;
- Provision of repair manual and service information;
- Future availability of parts (5 years);
- Commercial guarantee (3 years).

Reference or equivalent standards: TCO; EPEAT

Verification documentation: Relevant manuals, instructions and guarantees; description and photographs/short video for battery extraction.



(a) Material selection and compatibility with recycling

Rationale: Facilitate the recycling of plastic components at the end of the service life of the product.

Requirement: For products with plastic casings:

- plastics marking and *either*:
- minimum recycled plastic content (10% excluding PCB/display plastics), or;
- recyclability of plastic casings, enclosures and bezels (metal inserts, paints/coatings, flame retardants)

Reference or equivalent standards: ISO 180; TCO; EPEAT

Verification documentation: Test reports; exploded diagram of plastic parts and markings; traceability for recycled content.



(b) Design for disassembly and recycling

Rationale: Easy extraction of components and parts that are critical to repairability and end of life resource recovery for recycling

Requirement: Disassembly test to determine how many steps it takes to extract 'target' components and parts from the product.

Reference or equivalent standards: EPEAT

Verification documentation: A 'disassembly test report' detailing the disassembly sequence, the number of steps and the procedures. Can be carried out in-house, by independent testing body or by permitted recycling firm.



(a) Sourcing of 'conflict-free' minerals

Rationale: Support the responsible sourcing of tin, tantalum, tungsten and their ores, and gold from conflict-affected and high-risk areas.

Requirement: Overall due diligence according to OECD guidance; Use of supply chain projects or systems for at least one component or mineral – *OEM, final assembler or sub-assembly manufacturer can be project members.*

Reference or equivalent standards:

- TCO; EU Conformity scheme;
- Projects - Public-Private Alliance for a responsible minerals trade, Solutions for Hope; Systems - Conflict-free tin initiative, the Tin Source Initiative, the Tantalum Initiative.

Verification documentation: Report/EU certifications of conformity; Details of supply chain projects/systems for at least one component or mineral.



(b) Labour conditions and human rights during manufacturing

Rationale: A focus on key social 'hot spots' relating to final product assembly, providing a minimum acceptable level of assurance.

Requirement: Third party verification based on site audits that the ILO fundamental conventions and the supplementary provisions on working hours, remuneration and health & safety have been respected at the final assembly plant(s).

Reference or equivalent standards: EICC; SA 8000; TCO
Verification documentation: Certificate of compliance and supporting site audit report carried out by:

- a qualified social auditor (EICC VAP or SAAS), or;
- labour inspectors appointed by a public authority.

In conclusion

Using the new criteria

- Downloadable from DG ENV website
- User Manual supports application process
- Technical report provides background to criteria development

Please visit the DG ENV website:

<http://ec.europa.eu/environment/ecolabel/products-groups-and-criteria.html>

Thank you for your attention

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