

EU GPP Criteria for Imaging Equipment

Green Public Procurement (GPP) is a voluntary instrument. This document provides the EU GPP criteria developed for the imaging equipment product group. The accompanying Technical Background Report provides full details on the reasons for selecting these criteria and references for further information.

For each product/service group two sets of criteria are presented:

- The core criteria are those suitable for use by any contracting authority across the Member States and address the key environmental impacts. They are designed to be used with minimum additional verification effort or cost increases.
- The comprehensive criteria are for those who wish to purchase the best products available on the market. These may require additional verification effort or a slight increase in cost compared to other products with the same functionality.

1. Definition and Scope

This document covers procurement actions for the purchase and the leasing of **imaging equipment devices**.

For the purposes of these criteria, the product group of “Imaging equipment” shall comprise products which are used in the office and their function is:

- i) to produce a printed image (paper or photo document) through a marking process either from a digital image (provided by a network/card interface) or from a hardcopy through a scanning/copying process or/and
- ii) to produce a digital image from a hard copy through a scanning/copying process.

This criteria set applies to products which are marketed as printers, copiers and multifunctional devices (MFD).

The criteria do not cover the following product types:

- other type of imaging equipment devices i.e. fax machines, digital duplicators, mailing machines, scanners.
- large products which are not typically used in offices with the following technical specifications:
 - Standard monochrome format products with maximum speed over 66 A4 images per minute;
 - Standard colour format products with maximum speed over 51 A4 images per minute
 - designed for A2 media and larger

(speed to be rounded to the nearest integer as prescribed in the ENERGY STAR agreement ¹).

The definitions of the products and of printing service included in the scope of this product group are as follows:

A "**printer**" is a commercially available imaging product that serves as a hard copy output device, and is capable of receiving information from single-user or networked computers, or other input devices (e.g., digital cameras). The unit must be capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as printers, including printers that can be upgraded into MFDs in the field.

A "**copier**" is a commercially available imaging product whose sole function is the production of hard copy duplicates from graphic hard copy originals. The unit must be capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as copiers or upgradeable digital copiers.

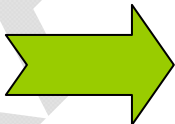
A "**multifunction device (MFD)**" is a commercially available imaging product, which is a physically integrated device or a combination of functionally integrated components that performs two or more of the core functions of copying, printing, scanning, or faxing. The copy functionality as addressed in this definition is considered to be distinct from single sheet convenience copying offered by fax machines. The unit must be capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as MFDs or multifunction products (MFPs).

¹ 2006/1005/EC: Council Decision of 18 December 2006. 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
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006D1005:EN:HTML>

2. Key Environmental Impacts and related criteria areas

The key environmental impacts from imaging equipment are mainly associated with the consumption of paper. Further, significant environmental impacts are associated with: a) energy consumption in the use phase, b) use of hazardous constituents and material selection in the product design, c) resource consumption in the product life cycle, including the use of toner and cartridges. Other impacts are related to the indoor air quality and to the disturbance due to acoustic noise.

Key Environmental Impacts associated with the life cycle of an Imaging equipment and related Key Environmental Areas	Green Public Procurement Approach
<p>Key environmental impacts considered along the product life cycle:</p> <ul style="list-style-type: none"> • global warming, • acidification, • ecotoxicity, • human toxicity, • eutrophication, • resource depletion, • energy consumption. <p>Key environmental areas</p> <ul style="list-style-type: none"> • Paper consumption (relevant for impacts to all environmental categories) • Energy consumption in the use phase of imaging equipment (relevant for impacts to all environmental categories) • Use of hazardous substances and their environmental consequences (relevant for impacts to human toxicity, ecotoxicity, eutrophication,) • Indoor air emissions and acoustic noise (relevant for impacts to human health) 	<ul style="list-style-type: none"> • Purchase products with efficient paper management • Purchase energy efficient models • Purchase products with a limited amount of hazardous components • Purchase products which are designed to be resource efficient, to generate little waste and to facilitate reuse and recycling • Purchase products with low indoor emissions and acoustic noise



The order of impacts does not necessarily reflect their importance.

Detailed information about the imaging equipment product group, including the information about related legislation and other sources, can be found in the Technical Background Report.

3. EU GPP Criteria for Imaging Equipment

Based on data and information in the Technical Background Report the following sets of EU GPP criteria for purchase of energy efficient imaging equipment with reduced environmental impact friendly are proposed:

3.1 EU GPP criteria for imaging equipment	
Core criteria	Comprehensive criteria
SUBJECT MATTER	SUBJECT MATTER
Purchase of and energy efficient imaging equipment devices with reduced environmental impact	Purchase of energy efficient imaging equipment devices with reduced environmental impact
TECHNICAL SPECIFICATIONS	TECHNICAL SPECIFICATIONS
<p>1. Double side printing</p> <p>Imaging equipment devices with a maximum operating speed for monochrome printing/copying of 25 ipm (images per minute) or more for A4 size paper shall be equipped with an automatic double-side print/copy unit (a duplex-unit).</p> <p>The duplex printing and/or copying function shall be set as default in the original software provided by the manufacturer.</p>	<p>1. Double side printing</p> <p>Imaging equipment devices with a maximum operating speed for monochrome printing/copying of 19 ipm (images per minute) or more for A4 size paper shall be equipped with an automatic double-side print/copy unit (a duplex-unit).</p> <p>The duplex printing and/or copying function shall be set as default in the original software provided by the manufacturer.</p>

<p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A statement from the manufacturer demonstrating that these requirements have been met is also accepted.</p>	<p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A statement from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
<p>2. Multiple page printing and/or copying in one paper sheet</p> <p>Imaging equipment devices shall offer as a standard feature the capability to print and/or copy two or more pages of a document on one sheet of paper when the product is managed by original software provided by the manufacturer (printer driver).</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A statement from the manufacturer demonstrating that these requirements have been met is also accepted.</p>	<p>2. Multiple page printing in one paper sheet</p> <p>Imaging equipment devices shall offer as a standard feature the capability to print and/or copy two or more pages of a document on one sheet of paper when the product is managed by original software provided by the manufacturer (printer driver).</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A statement from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
<p>3. Energy efficiency</p> <p>All products shall meet the requirements of the latest ENERGY STAR specifications for imaging equipment available at:</p>	<p>3. Energy efficiency</p> <p>All products shall meet the requirements of the latest ENERGY STAR specifications for imaging equipment available at:</p>

<p>www.eu-energystar.org</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements and products awarded the Energy Star v.2.0 label (or if applicable a more recent one) will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>	<p>www.eu-energystar.org</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements and products holding the Energy Star v.2.0 label (or if applicable a more recent one) will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
<p>4. User instructions for green performance management</p> <p>A guide shall be provided with instructions on how to maximise the environmental performance of the particular imaging equipment device (covering paper management functions, energy efficiency functions, waste management of the product and of consumables ink and/or toner cartridges) in written form as a specific part of the user manual and in digital form accessible via the manufacturers website.</p> <p>Verification</p> <p>A copy of the instruction manual shall be supplied to the authority. This manual shall be available for access on the manufacturer's website. A statement from the manufacturer demonstrating that these</p>	<p>4. User instructions for green performance management</p> <p>A guide shall be provided with instructions on how to maximise the environmental performance of the particular imaging equipment device (covering paper management functions, energy efficiency functions, waste management of the product and of consumables ink and/or toner cartridges) in written form as a specific part of the user manual and in digital form accessible via the manufacturers website.</p> <p>Verification</p> <p>A copy of the instruction manual shall be supplied to the authority. This manual shall be available for access on the manufacturer's website. A statement from the manufacturer demonstrating that these</p>

requirements have been met shall be also provided.	requirements have been met shall be also provided.
<p>5. Energy efficiency in standby mode</p> <p>Imaging equipment device shall fulfil the requirement: "the power consumption of the networked product with a) low network availability (PSOR² < 400 Watt) in the modes with networked standby which the product is switched into by the power management function does not exceed 2,00 W b) high network availability (PSOR² ≥ 400 Watt) in the modes with networked standby which the product is switched into by the power management function does not exceed 3,75 W "</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>	<p>5. Energy efficiency in standby mode</p> <p>Imaging equipment device shall fulfil the requirement: "the power consumption of the networked product with a) low network availability (PSOR² < 400 Watt) in the modes with networked standby which the product is switched into by the power management function does not exceed 1,50 W b) high network availability (PSOR² ≥ 400 Watt) in the modes with networked standby which the product is switched into by the power management function does not exceed 3,00 W "</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
	<p>6. Resource efficiency for cartridges: Design for reuse of toner and/or ink cartridges</p> <p>The products shall not be designed to prevent the use of reused (remanufactured) toner and/or ink cartridge</p>

² PSOR = Power Supply Output Rating (PSOR) which refers to the typical power level during full operation

	<p>Any cartridge provided or recommended for use in the product shall be designed for reuse with no technical barriers such as chips, compatibility of cartridge and printer software which hamper reusing the cartridge.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
	<p>7. Resource efficiency: Minimum content of recycled and reused materials</p> <p>The external product plastic casing parts together with the recommended for use OEM ink or toner cartridge or bottle shall have in total a post-consumer recycled and/or reused content of not less than 10 % by mass. Small plastic parts weighting less than 25 g are exempted.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed</p>

	<p>requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
	<p>8. Acoustic noise</p> <p>For devices with a printing function:</p> <p>The ‘Declared A-weighted Sound Level’ (L_{WAd}) according to the methods specified in ISO 7779 3rd edition (2010) shall not exceed the limit set by the following formula:</p> $L_{WAd,lim} = 38 + 20 \cdot \log(S + 8) \text{ dB}$ <p>Where</p> <p>S = images per minute for a) monochrome images when printing in monochrome mode and b) colour images when printing in colour</p> <p>$L_{WAd,lim}$ = A-weighted sound power level limit given in dB</p> <p>For products capable to print in colour both monochrome and colour printing shall fulfil the above limit.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label and fulfilling the listed</p>

	<p>requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met will be also accepted.</p>
AWARD CRITERIA	AWARD CRITERIA
Points will be awarded	Points will be awarded
<p>1. Design for recycling, end-of-life management and disassembly</p> <p>A. The external product plastic casings and the recommended for use by the manufacturer (OEM) cartridges of weight 25g or more of the imaging equipment offered does not contain brominated aromatic substances in concentration over 0.01%.</p> <p>B. The imaging device offered is easy to dismantle by professionally trained personnel using the tools usually available to them, for the purpose of repairs and replacements of worn-out parts, upgrading older or obsolete parts, and separating parts and materials, ultimately for recycling or reuse.</p> <p>Verification</p> <p>Regarding point A. Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply. A</p>	<p>1. Design for recycling, end-of-life management and disassembly</p> <p>A. The external product plastic casings and the recommended for use by the manufacturer (OEM) cartridges of weight 25g or more of the imaging equipment offered does not contain brominated aromatic substances in concentration over 0.01%.</p> <p>B. The imaging device offered is easy to dismantle by professionally trained personnel using the tools usually available to them, for the purpose of repairs and replacements of worn-out parts, upgrading older or obsolete parts, and separating parts and materials, ultimately for recycling or reuse.</p> <p>Verification</p> <p>Regarding point A. Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply. A</p>

<p>declaration from the manufacturer that the requirements have been met is also accepted. The applicant shall declare the substances used as flame retardants.</p> <p>Regarding point B. A technical report from the manufacturer showing the dismantling of the imaging equipment with an exploded diagram of the imaging equipment labelling the main components as well as identifying any hazardous substances in these components as specified in WEEE Directive 2002/96/EC Annex 2. This diagram shall be available in the manufacturer website. Information regarding hazardous substances shall be provided to the authority in the form of a list of materials identifying material type, quantity used and position on the imaging equipment. Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p>	<p>declaration from the manufacturer that the requirements have been met is also accepted. The applicant shall declare the substances used as flame retardants.</p> <p>Regarding point B. A technical report from the manufacturer showing the dismantling of the imaging equipment with an exploded diagram of the imaging equipment labelling the main components as well as identifying any hazardous substances in these components as specified in WEEE Directive 2002/96/EC Annex 2. This diagram shall be available in the manufacturer website. Information regarding hazardous substances shall be provided to the authority in the form of a list of materials identifying material type, quantity used and position on the imaging equipment. Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p>
<p>2. Energy efficiency in standby mode</p> <p>Imaging equipment device shall fulfil the requirement: "the power consumption of the networked product with a) low network availability ($PSOR^2 < 400 \text{ Watt}$) in the modes with networked standby which the product is switched into by the power management function does not exceed 1,50 W b) high network availability ($PSOR^2 \geq 400 \text{ Watt}$) in the modes with</p>	<p>-Note: High standards for energy efficiency in standby mode are already included in the technical specifications of the comprehensive criteria. There is no award criterion included for the comprehensive criteria.</p>

networked standby which the product is switched into by the power management function does not exceed 3,00 W "

Verification

Products holding a relevant Type 1 Ecolabel fulfilling the listed requirements will be deemed to comply.

A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.

3. Acoustic noise

For devices with a printing function:

The 'Declared A-weighted Sound Level' (L_{WAd}) according to the methods specified in ISO 7779 3rd edition (2010) shall not exceed the limit set by the following formula:

$$L_{WAd,lim} = 38 + 20 \cdot \log(S + 8) \text{ dB}$$

Where

S = images per minute for a) monochrome images when printing in monochrome mode and b) colour images when printing in colour

$L_{WAd,lim}$ = A-weighted sound power level limit given in dB

For products capable to print in colour both monochrome and colour

-Note: High standards for acoustic noise requirements are already included in the technical specifications of the comprehensive criteria. There is no award criterion included for the comprehensive criteria.

<p>printing modes shall fulfil the above limit.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label and fulfilling the listed requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met will be also accepted.</p>	
	<p>2. Substances in plastic parts hazardous to health</p> <p>Plastic parts heavier than 25g do not contain substances or preparations (including additives used as flame retardants) that are assigned any of the following risk phrases as defined in Council Directive No. 1272/2008:</p> <ul style="list-style-type: none"> • R45 (may cause cancer). • R46 (may cause heritable genetic damage). • R60 (may impair fertility). • R61 (may cause harm to the unborn child). <p>Verification</p> <p>Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also</p>

be accepted.

3. Indoor air emissions

In the use phase the product shall not emit the pollutants listed below in amounts higher than the maximum emission rates given in the following table:

Substance	Emission rate Print phase (mg/h)		Emission rate Ready phase (mg/h).	
	Colour Printing Total in ready + print phase	Monochrome printing Total in ready + print phase	Desktop products	Floor-mounted equipment (Volume >250 litres)
TVOC (total volatile organic compounds)	18	10	1	2
Benzene	<0.05	<0.05		
Styrene	1.8	1.0		
Non identifiable VOC	0.9	0.9		
Ozone	3.0	1.5		
Dust	4.0	4.0		

*applies only for Electrophotography (laser) printing technology

	<p>All the above emission rates must be measured in accordance with the requirements described in ECMA-328 5th edition (based on Annex C9. Model for RAL-UZ 122 Option) or Blue Angel: RAL-UZ 122 Version June 2006 or equivalent.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A technical dossier from the manufacturer demonstrating that these requirements have been met is also accepted.</p>
	<p>4. Mercury in lighting sources</p> <p>Imaging equipment devices in which mercury or its compounds is not intentionally added to the lighting sources used.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>A technical dossier or a declaration from the manufacturer demonstrating that these requirements have been met is also accepted.</p>

CONTRACT PERFORMANCE CLAUSE	CONTRACT PERFORMANCE CLAUSE
<p>1. The contractor shall guarantee the availability of spare parts for at least 5 years from the time that production ceases.</p> <p>2. Guarantee for repair or replacement of minimum 5 years shall be given.</p> <p>Verification Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.</p>	<p>1. The contractor shall guarantee the availability of spare parts for at least 5 years from the time that production ceases.</p> <p>2. Guarantee for repair or replacement of minimum 5 years shall be given.</p> <p>Verification Products holding a relevant Type 1 Ecolabel fulfilling the listed criteria will be deemed to comply. Other appropriate means of proof will also be accepted.</p>

Explanatory notes

In procuring imaging equipment, contracting authorities may let separate contracts (covering, for example, equipment supply, and installation) to different contractors. In such cases, different contractors may therefore be responsible for ensuring that different criteria are met.

Award Criteria: Contracting authorities will have to indicate in the contract notice and tender documents how many additional points will be awarded for each award criterion. Environmental award criteria should, altogether, account for at least 15% of the total points available.

Cost Considerations

Life cycle costing

The contracting authority may optionally use a life cycle costing approach for the use phase. This means that instead of considering just the purchase price of the product when assessing the one offering best value for money, the contracting authority will consider the life cycle cost (LCC) over the estimated period of ownership of the device. Such an approach should include the initial cost of the installation, its estimated lifetime (indicatively 5 years is considered the average lifetime of imaging equipment), and operational costs including costs of inks and/or toner consumables, of electricity consumption together with their estimated life. All this will finally result to the calculation of the total cost of imaging equipment over its lifetime. In this respect, the contracting authority will need to estimate the prices for inks and/or toner consumables as well as energy. In case it is relevant i.e. for electricity the rate at which electricity price increases may also be covered. It shall be highlighted that the operational costs rely mainly on the purchase of consumables (inks and toner cartridges) and on a second level on electricity consumed and these are far over the initial purchase price of the imaging device.

The contract would then be awarded using the LCC results instead of the purchase price only.

The EU Energy Star website has a useful tool for calculating the possible financial savings of buying a more efficient product: <http://www.eu-energystar.org/calculator.htm>. Based on this life cycle costing calculator, it can be identified that the main operational costs for imaging equipment are related mainly to the purchase of ink or toner consumables and to paper. Further, the cost is related to the electricity consumption.

As with any electricity-using product, purchasing energy efficient models is generally a win-win option – reducing running costs, and also reducing environmental impacts. Generally, the energy efficiency of the product has a relatively little influence on the purchase price, certainly if you are aiming for a model within the 25% most efficient on the market.

Note related to comprehensive part award criterion 3 Indoor air emissions: The tenderer is responsible only for the offered combination of Imaging Equipment and the print supply for which the compliance to award criterion 3 Indoor air emissions is stated. If a user of a compliant printing system is using a different supply, refilled or remanufactured, the compliance statement by the initial supplier is not valid. To maintain the compliance statement, the user must contact the provider of the refilled/remanufactured print supplies and obtain a new compliance confirmation.

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