

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**.

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 and/or
- ii) to produce a digital image from a hard copy through a scanning/copying process.

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

The criteria do not cover the following product types:

- other types of imaging equipment 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
 - Products 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 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).

"Networked equipment" means equipment that has the ability to connect to a network and has one or more network ports;

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>

"Networked equipment with high network availability" (HiNA equipment) means an equipment with one or more of the following functionalities but no other, as the main function(s): router, network switch, hub, modem, wireless network access point (not being a terminal), VoIP telephone, video phone;

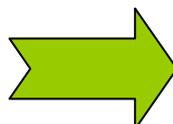
"Networked equipment with high network availability functionality" (equipment with HiNA functionality) means equipment with the functionality of a router, network switch, hub, wireless network access point (not being a terminal) or combination thereof included, but not being HiNA equipment;

"Large format printer" is a printer that can handle very large drawing or photo files that require an embedded computing capability".

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 	<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



- 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)
- 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 have been developed to support the purchase of energy efficient imaging equipment with reduced environmental impacts:

3.1 EU GPP criteria for imaging equipment	
Core criteria	Comprehensive criteria
SUBJECT MATTER	SUBJECT MATTER
Purchase of energy efficient imaging equipment with reduced environmental impact	Purchase of energy efficient imaging equipment with reduced environmental impact
TECHNICAL SPECIFICATIONS	TECHNICAL SPECIFICATIONS
1. Double side printing	1. Double side printing
Imaging equipment devices with a maximum operating speed for	Imaging equipment devices with a maximum operating speed for

<p>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. For the devices receiving a printing order from a computer, a message should be formulated by the manufacturer and displayed on the computer screen of the user (e.g. in the print dialogue) when the default setting is changed into one-side printing. The message should read: "This mode of printing will contribute to higher environmental impacts than double-side printing".</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>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. For the devices receiving a printing order from a computer, a message should be formulated by the manufacturer and displayed on the computer screen of the user (e.g. in the print dialogue) when the default setting is changed into one-side printing. The message should read: "This mode of printing will contribute to higher environmental impacts than double-side printing".</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 images on single sheet of paper</p> <p>Imaging equipment devices shall offer as a standard feature the capability to print and/or copy 2 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>2. Multiple images on single sheet of paper</p> <p>Imaging equipment devices shall offer as a standard feature the capability to print and/or copy 2 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>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>The energy consumption of the product shall fulfil as a minimum the energy efficiency requirements of Energy Star v.2.0 criteria for imaging equipment, but excluding labelling requirement.</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>3. Energy efficiency</p> <p>The energy consumption as a minimum of the product shall fulfil the energy efficiency requirements of Energy Star v.2.0 criteria for imaging equipment, but excluding labelling requirement.</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 (covering paper management functions, energy efficiency functions, waste management of the product and of any consumables such as</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 (covering paper management functions, energy efficiency functions, waste management of the product and of any consumables such as</p>

<p>ink and/or toner cartridges) in written form as a specific part of the user manual and/or in digital form accessible via the manufacturers website.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply. Other appropriate means of proof will also be accepted, such as written evidence from the manufacturer that the above clause will be met.</p>	<p>ink and/or toner cartridges) in written form as a specific part of the user manual and/or in digital form accessible via the manufacturers website.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply. Other appropriate means of proof will also be accepted, such as written evidence from the manufacturer that the above clause will be met.</p>
<p><i>(not applicable to printing equipment with a power supply of a rated power larger than 750 W)</i></p> <p>5. Energy efficiency in standby mode</p> <p>The power consumption of HiNA equipment or equipment with HiNA functionality, in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 4,00 W.</p> <p>The power consumption of other networked equipment in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 2,00 W.</p> <p>The power consumption limits as stipulated above shall not apply to large format printing equipment.</p> <p>Networked equipment that has one or more standby mode(s) shall</p>	<p><i>(not applicable to printing equipment with a power supply of a rated power larger than 750 W)</i></p> <p>5. Energy efficiency in standby mode</p> <p>The power consumption of HiNA equipment or equipment with HiNA functionality, in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 3,00 W.</p> <p>The power consumption of other networked equipment in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 1,50 W.</p> <p>The power consumption limits as stipulated above shall not apply to large format printing equipment.</p> <p>Networked equipment that has one or more standby mode(s) shall</p>

<p>comply with the requirements for these standby mode(s) when all network ports are disconnected or, for wireless network ports, the network ports are deactivated.</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>comply with the requirements for these standby mode(s) when all network ports are disconnected or, for wireless network ports, the network ports are deactivated.</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. Product longevity and warranty</p> <p>Repair or replacement of the product shall be covered by the warranty terms for minimum five years. The tenderer shall further ensure that genuine or equivalent spare parts are available (direct or via other nominated agents) for at least ten years from the date of purchase. This clause will not apply to unavoidable temporary situations beyond the manufacturer's control such as natural disasters.</p> <p>Verification:</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>Other appropriate means of proof will also be accepted, such as a self- declaration from the manufacturer stating that the above clause</p>	<p>6. Product longevity and warranty</p> <p>Repair or replacement of the product shall be covered by the warranty terms for minimum five years. The tenderer shall further ensure that genuine or equivalent spare parts are available (direct or via other nominated agents) for at least ten years from the date of purchase. This clause will not apply to unavoidable temporary situations beyond the manufacturer's control such as natural disasters.</p> <p>Verification:</p> <p>Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p> <p>Other appropriate means of proof will also be accepted, such as a self- declaration from the manufacturer stating that the above clause</p>

is met.	is met.
	<p><i>(Requirement not applicable for imaging equipment that is not using cartridges)</i></p> <p>7. Resource efficiency for cartridges: Design for reuse of toner and/or ink cartridges</p> <p>The products must accept remanufactured toner and/or ink cartridges..</p> <p>Devices and practices that would prevent reuse of toner and/or ink cartridge (i.e. anti re-utilisation devices/ practises) should not be present or applied.</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><i>(Only applicable for devices with a printing function)</i></p> <p>8. Acoustic noise</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>

	<p style="text-align: center;">$L_{WAd,lim} = 38 + 20 \cdot \log(S + 8)$ dB</p> <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>Where products are capable of printing in both colour and monochrome they shall meet the above limits during both printing modes.</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>
AWARD CRITERIA	AWARD CRITERIA
Points will be awarded for:	Points will be awarded for:
<p>1. Design for disassembly</p> <p>The manufacturer shall demonstrate that the imaging device can be easily dismantled by professionally trained personnel using the tools usually available to them, for the purpose of repairs and</p>	<p>1. Design for disassembly</p> <p>The manufacturer shall demonstrate that the imaging device can be easily dismantled by professionally trained personnel using the tools usually available to them, for the purpose of repairs and</p>

<p>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>The applicant shall submit an exploded diagram of the product. The diagram and accompanying material shall: label the main components; provide dismantling instructions and associated time for dismantling; identifying any hazardous substances in components. It can be in written or in digital format. Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p>	<p>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>The applicant shall submit an exploded diagram of the product. The diagram and accompanying material shall: label the main components; provide dismantling instructions and associated time for dismantling; identifying any hazardous substances in components. It can be in written or in digital format. Products holding a relevant Type 1 Eco-label fulfilling the listed requirements will be deemed to comply.</p>
<p><i>(not applicable to printing equipment with a power supply of a rated power larger than 750 W)</i></p> <p>2. Energy efficiency in standby mode</p> <p>The power consumption of HiNA equipment or equipment with HiNA functionality, in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 3,00 W.</p> <p>The power consumption of other networked equipment in a condition providing networked standby into which the equipment is switched by the power management function, or a similar function, shall not exceed 1,50 W.</p> <p>The power consumption limits as stipulated above shall not apply to</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>

<p>large format printing equipment.</p> <p>Networked equipment that has one or more standby mode(s) shall comply with the requirements for these standby mode(s) when all network ports are disconnected or, for wireless network ports, the network ports are deactivated.</p> <p>The power consumption limits as stipulated above shall not apply to printing equipment with a power supply of a rated power larger than 750 W.</p> <p>Verification</p> <p>Products holding a relevant Type 1 Ecolabel 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>3. Acoustic noise</p> <p>For devices with a printing function:</p> <p>The ‘Declared A-weighted Sound Level’ ($L_{WA,d}$) according to the methods specified in ISO 7779 3rd edition (2010) shall not exceed the limit set by the following formula:</p> $L_{WA,d,lim} = 38 + 20 \cdot \log(S + 8) \text{ dB}$ <p>Where</p>	<p>-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>

<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>Where products are capable of printing in both colour and monochrome they shall meet the above limits during both printing modes.</p> <p>Verification Products holding a relevant Type 1 Eco-label and fulfilling the listed requirements will be deemed to comply. A technical dossier from the manufacturer demonstrating that these requirements have been met will be also accepted.</p>	
	<p>2. Content of substances on the Candidate List</p> <p>Points will be awarded if the equipment is free from substances listed as substances of very high concern on the REACH Candidate List (for at least one year), i.e. the equipment does not contain more than 0.1 % weight of Candidate List substance/ weight of article. The less candidate list substances present in the equipment the more points will be awarded.</p> <p>Verification:</p>

If the equipment contains Candidate List substances:

A written statement naming (including CAS number) any Candidate List substance present in the product at a concentration $\geq 0.1\%$ weight of Candidate List substance/ weight of article shall be supplied to the authority.

If the equipment does not contain Candidate List substances:

A written statement guaranteeing that the equipment contains maximum 0.1 % weight of Candidate List substance/ weight of article shall be supplied to the authority.

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:

Emission rate in mg/h,

Printing Ready mode	TVOC**	1.Monochrome printing·	2.Colour
		1a (Desktop products)	2a (Desktop products)
		1b (Floor-mounted equipment (FME) (Volume >250 l)	2b.FME, Volume > 250 l)
		Printing mode (Sum of Ready + Printing mode)	
	TVOC**	10	18
	Benzene	< 0,05	< 0,05
	Styrene	1,0	1,8
	Not identified single VOC substances**	0.9	0.9

	<table border="0" style="width: 100%; text-align: right;"> <tr> <td>Ozone *</td> <td>1,5</td> <td>3,0</td> </tr> <tr> <td>Dust*</td> <td>4,0</td> <td>4,0</td> </tr> </table> <p>*only for Electrophotography (EP) -printing</p> <p>** the list of the "identifiable VOCs" in the measuring method is provided of Blue Angel RAL UZ 171 (01.07.2012). Appendix S-M chapter 5</p> <p>All the above emission rates must be measured in accordance with the requirements described in Blue Angel RAL UZ 171 (available in English and German).</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>	Ozone *	1,5	3,0	Dust*	4,0	4,0
Ozone *	1,5	3,0					
Dust*	4,0	4,0					
	<p>4. Mercury in lighting sources</p> <p>Mercury or its compounds shall not intentionally be added to light sources used in imaging equipment.</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>The contractor shall offer a free of charge take-back system for returning the imaging device after its use in order to channel it to reuse and/or material recycling with preference given to reuse. Third parties (dealers and service agencies or companies engaged in the reuse and/or recycling business) may be subcontracted to perform this task.</p>	<p>The contractor shall offer a free of charge take-back system for returning the imaging device after its use in order to channel it to reuse and/or material recycling with preference given to reuse. Third parties (dealers and service agencies or companies engaged in the reuse and/or recycling business) may be subcontracted to perform this task.</p>

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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.

Regarding the comprehensive 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.

Life Cycle Costs

In the development of GPP criteria, one of the most important aspects to take into account is a life-cycle cost analysis of the best environmentally-performing products with respect to average products in the market. Cost considerations (using a life-cycle perspective) are especially important in public procurement because of the need to justify public spending. Member States should be encouraged to make choices that are a good value in the long-term and compatible with wider policies.

Such an approach should include the initial cost of 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 and electricity consumption. 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.

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.

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/en/en_007.shtml.

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