Environmental criteria for sustainable public procurement of

ICT hardware and mobile appliances

Version March 2017

1. Scope/definition

The ICT hardware and mobile appliances product group comprises workplace and person-related hardware and mobile appliances for end users, such as desktops, laptops, monitors, tablets and mobile telephones. The following products, with their corresponding CPV codes, are part of this product group. This list of products is non-exhaustive.

Products	CPV code
Computer equipment and supplies	30200000-1
Data processing machines (hardware)	30210000-4
Personal computers	30213000-5
Portable computers	30213100-6
Tablet PCs	30213200-7
Desktop computers	30213300-8
Monitors	30231300-0
Computer parts, accessories and supplies	30237000-9
Networks	32400000
Telecommunications equipment and supplies	32500000
Cordless telephones	32552110
No criteria have been drawn up for mobile telephones and for other fixed-line telephones	

Excluded from the scope of this product group are:

- software (there is a separate product group for this);
- reproduction equipment (there is a separate product group for this);
- networks (component of the product group Networks, data centre hardware and telephone services);
- infrastructure and data centres;
- hardware-related services.

This document describes the environmental criteria. Information about the other elements of sustainable public procurement, such as social conditions and social return, may be found on the PIANOo website, on the specific product group page: https://www.pianoo.nl/document/10523/productgroep-ict-hardware-mobiele-apparaten.

2. Most significant environmental impacts

The table below lists the sustainability themes and describes the approach to each theme for the product group. The "Approach" column presents a statement indicating the influence of sustainable purchasing and its criteria on the "sustainability" of the theme. This column also includes a reference to any requirements, award criteria or points of attention/suggestions that may be useful in implementing the approach. The product group can also have an impact on other environmental themes but, for now at least, these are less relevant, of a much less significant level of concern or do not as yet have a suitable set of standard criteria.

Themes:		Approach:	No. of requirement/ Criterion
Energy and climate Energy consumption of hardware and server rooms and corresponding CO_2 emissions, energy consumption of hardware production	⟹	• use of energy-efficient models.	AS3, ME1, ME11, GC3, GC5
		• energy-efficient use and management of hardware.	ME6

	• use of equipment with functions for energy management on hardware.	ME8

Supplies and Raw materials Raw materials consumption in the production of hardware, critical materials in hardware, hardware packaging, end-of-life products, recycling, reuse	⇨	• Extend life cycle of hardware.	AS2
		• Use equipment with replaceable parts.	ME2, ME3
		• Enable disassembly and recycling.	GC1, GC6
		• Use recycled material.	ME7, GC2
		• Ensure that parts can be reordered.	ME9
		• Transparency regarding origin.	GC4
		• Service for reuse and recycling.	AS4, SC7
		• Flexible working systems.	AS1
		• Bio-based procurement.	AS5

Water and Soil Harmful substances in plastic parts, mercury in monitors	⇨	• Use products with a limited number of (or no) hazardous components.	ME4, ME10

Health and welfare Noise level of equipment	⇨	• Use product with a limited noise level.	ME5

3. Points of attention/suggestions

Devoting attention to the opportunities and possibilities for the most sustainable procurement possible in the preparation phase will lead to specifications that are more ambitious or that differ from the standard technical specifications and award criteria set out in this document. The table below presents points for attention and suggestions for promoting sustainability in procurement within this product group

No.	Points of attention/suggestions (AS)

AS1	**Take changes in the organisation into account** When procuring computers, anticipate trends or the restructuring of the organisation, such as ICT trends, the increase in telecommuting and changes in the office environment, such as the creation of flexible workplaces. Rapid changes within the organisation require flexible workplaces and work systems.
AS2	**Take hardware/software expansions into account** When procuring new computers assess the possibilities of expanding the hardware and/or software in the future. Specific trends or restructuring within the organisation can lead to changing software applications and hardware use. Procure systems with sufficient capacity for expandability or systems that are easy to adapt. Note: laptops are more difficult to expand.
AS3	**Use laptops or thin clients** Where possible, purchase laptops or thin client systems instead of desktops and monitors when hardware expansion is less of a concern. The average laptop (notebook) uses 38% less energy in the production and use phase than the average desktop. A thin client uses 15% less energy on average than a desktop in these stages. Furthermore, the raw materials used to produce the overall product are less.
AS4	**Service for reuse and recycling hardware and mobile appliances** Promote high-quality reuse of end-of-life hardware and mobile appliances, or recycling of these products where reuse is not possible. This can be outsourced as a service. Important points of attention are: evaluation of the value and categorisation of the end-of-life hardware and mobile appliances, deletion of data from all data-carrying equipment (AIVD requirement), maximising lifetime and value of the equipment through reuse and recycling of hardware and mobile appliances that cannot be reused.
AS5	**Consider bio-based procurement** In many cases, bio-based raw materials are preferable over fossil-based raw materials (such as plastics). Survey (in consultation with the market where possible) the possibilities, the pros and any cons of using bio-based raw materials for your procurement needs and give them an appropriate place in your procurement documents. More information on bio-based procurement can be found via PIANOo SPP Theme Bio-based Procurement (https://www.pianoo.nl/themes/maatschappelijk-verantwoord-inkopen-duurzaam-inkopen/mvi-thema-s/biobased-inkopen), where the guide to bio-based procurement and the Guidelines to Bio-based Procurement have also been made available (https://www.pianoo.nl/themas/maatschappelijk-verantwoord-inkopen-mvi-duurzaam-inkopen/handreikingen-mvi-0/handreikingen-biobased-inkopen). If you include a requirement that the material used must be bio-based, ask for descriptions of the material used and documentation supporting claims such as "bio-based", "sustainable biomass" and "compostable". This will make the assessment easier and give the purchaser the opportunity to check upon delivery of the goods whether the items supplied are in fact those agreed. It is also important not to require the production of specific certificates because this may put producers to unnecessary expense when alternative evidence would also suffice.
AS6	**Opt for refurbished equipment** Examine whether it is possible to acquire refurbished equipment (provided it meets the energy criteria set). Practical experience shows that such equipment is not of inferior quality and does not require more maintenance than new equipment. Offer the tenderer the opportunity to supply not only new, but also reconditioned equipment. Include the following text in the ToR, for example: "The equipment supplied may be refurbished equipment, provided it is of a pleasing and well-looked-after appearance (presentable, with no wear and tear) and in very good condition. Naturally, all other requirements mentioned in the ToR (such as quality and availability) will apply to refurbished equipment as much as they do to new equipment."

4. Selection criteria

No.	Selection Criteria (SC)

SC1	*The selection of candidates takes place on the basis of the assessment of the selection criteria. The candidates that score highest for the qualitative selection criteria, as set out below, will be invited to tender.*
	Refurbished equipment
	The greater the tenderer's experience of supplying refurbished equipment, the higher this component will be rated. This will involve equipment with the same specifications as described in the ToR.
	The more refurbished equipment the candidate has supplied, the greater the number of points awarded.
	The longer the guarantee given for the refurbished equipment, the greater the number of points awarded.
	The guarantee must at least include cover entailing the free repair or replacement of defective components of the equipment supplied, to the extent that they did not become defective as a result of improper use.
	Explanation
	For example, points may be awarded on the basis of the following classification:

Number of points	Quantity of refurbished equipment supplied to the commercial market:
0	0 items
3	1 – 50 items
6	51 – 100 items
9	101 – 150 items
15	151 – 200 items
20	201 – 250 items
25	251 or more items

If the equipment is supplied with a guarantee term of between one month and six months, the number of points will be multiplied by 1.5.

If the equipment is supplied with a guarantee term of six months or longer, the number of points will be multiplied by two.

Verification
The tenderer may be asked to indicate the quantity of refurbished equipment, with the same specifications, it has supplied to the commercial market, as well as the guarantee term it has given for that equipment.

5. Technical specifications

No.	Technical specifications (ME)
ME1	**"Energy Star" requirements for computers and/or monitors**
	All products meet the most recent Energy Star standards for energy performance. See: www.eu-energystar.org.
	Verification
	The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. Products in the Energy Star database (see http://www.eu-energystart.org/db-currentlists.htm) are in compliance. All products with a relevant EU Ecolabel are assumed to be in compliance. Likewise, products with a different Type I environmental label or an environmental statement meeting this criterion will be assumed to be in compliance. Other appropriate forms of documentation will also be accepted, such as a technical file from the manufacturer or an approval report of an accredited institution (for example, an ISO 17025-accredited institution authorised to issue approval reports) showing that the products meet the criteria.
	Explanation
	As from 7 September 2015, computers are subject to the Energy Star standards version 6.1,

	and as from 21 October 2016, monitors are subject to version 7.0.

A Type I environmental label refers to environmental labels based on an independent test using pre-determined environmental criteria that are based on a "life-cycle approach". Examples in the Netherlands include the Milieukeur label and the EKO label. Other examples include the EU Ecolabel (Europe), Blaue Engel (Germany) and Nordic Swan (Scandinavia). For further information on type I environmental labelling, see: http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm.

For information on ISO 17025 with regard to performance of trials and calibrations, see http://www.nen.nl/NEN-Shop/Norm/NENENISOIEC-170252005-nl.htm.

Source EU GPP |
| ME2 | **Replacement of parts in PCs**
PCs are designed such that:

- the memory is easy to access and can be replaced or updated;
- the hard disk (or components that run the functions of the hard disk) and, if applicable, CD-ROM/DVD station can be replaced.

Verification
The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. All products with a relevant EU Ecolabel are assumed to be in compliance. Likewise, products with a different Type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate documentation will also be accepted.

Explanation
For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm.

Source EU GPP |
| ME3 | **Replacement of components in Notebooks**
Notebooks will be designed such that the memory is easy to access and can be replaced or updated.

Verification
The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. All products with a relevant EU Ecolabel are assumed to be in compliance. Likewise, products with a different Type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate documentation will also be accepted.

Explanation
For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm.

Source EU GPP |
| ME4 | **Mercury in screens**
The backlighting of LCD screens must be mercury-free.

Verification
The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. All products with a relevant EU Ecolabel are assumed to be in compliance. Likewise, products with a different type I environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate documentation will also be accepted.

For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm.

Source EU GPP |
| ME5 | **Noise level of PCs and notebooks**
To be in compliance with point 3.2.5 of ISO 9296, the "Declared A-weighted Sound Power Level" (re 1 pW) of PCs and notebooks, measured in accordance with ISO 7779 (or equivalent standard) may not exceed: |

	For PCs: • 4.0 B(A) in non-active status (equal to 40 dB(A)); • 4.5 B(A) when reading a hard disk (equal to 45 dB(A)). *For notebooks* • 3.5 B(A) in non-active status (equal to 35 dB(A)); • 4.0 B(A) when reading a hard disk (equal to 40 dB(A)). *Verification* The tenderer may be asked to submit documentation for PCs demonstrating compliance with the criteria above. All products with a relevant EU Ecolabel are considered to be in compliance. Likewise, products with a different type I environmental label or an environmental declaration meeting this criterion will be assumed to be compliant. Other appropriate documentation will also be accepted. Products with a relevant type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate documentation will also be accepted. This may be a report confirming that the noise emission levels have been measured in accordance with ISO 7779 and ISO 9296 or equivalent standards. The report must state the noise emission levels measured in both non-active status and when accessing a disk station, and be declared in compliance with 3.2.5 of ISO ISO9296 or an equivalent standard. *Explanation* For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm. *Source EU GPP*
ME6	**Environmentally friendly hardware management** As part of ensuring that hardware is managed in an environmentally friendly manner, instructions and/or courses will be offered to IT employees. *Verification* The tenderer may be asked to provide a copy of the instruction guide. This instruction guide may be preloaded onto the computer (or for monitors, supplied with the operating system software) to allow the user to access it. The instruction guide must also be available on a website. The instruction guide may address subjects such as the use of energy-saving functions. Another option is to offer a simple training course (interactive, in accordance with the nature of the equipment) or an information package. *Source EU GPP*
ME7	**Use recycled material for packaging** Any cardboard boxes used must consist of at least 80% recycled material. If plastic bags or sheets are used in the consumer packaging, they must be made up of at least 75% recycled material. This technical requirement will not apply if bio-based material is chosen. *Verification* The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. Products with a Type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. As an alternative, a declaration of compliance with this criterion for the product packaging may be submitted. This criterion applies only to primary packaging within the definition of European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste. *Explanation* For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm. *Source EU GPP*
ME8	**Functions for hardware energy management** Functions for energy management are present on the equipment itself (for all products). *Verification* The tenderer may be asked to indicate clearly for each product that the energy management

	function is on the device, where it is found and how it is operated. *Source EU GPP*
ME9	**Availability of spare parts** The tenderer must ensure that spare parts will be available for at least five years after the end of production. *Verification* The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. All products with a relevant EU Ecolabel will be assumed to be in compliance. Likewise, products with a different Type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate documentation will also be accepted. *Explanation* For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm. *Source EU GPP*
ME10	**Hazardous substances in plastic parts** Plastic parts heavier than 25 g may not contain flame retardants or preparations that have been assigned any of the following H phrases within the definition of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006: • H350 (may cause cancer); • H340 (may cause inheritable genetic damage); • H360F (may impair fertility); • H360D (may cause harm to the unborn child). *Verification* The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. All products with a relevant EU Ecolabel will be assumed to be in compliance. Products with a different Type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate documentation will also be accepted. *Explanation* For an explanation of the type I environmental label, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm. *Source EU GPP*
ME11	**Energy consumption of networks: cordless telephones for a landline connection** Cordless telephones, intended for a landline connection, are in accordance with the latest version of the Energy Star criteria. See http://www.energystar.gov/index.cfm?c=phones.pr_crit_phones for details. *Verification* The tenderer may be asked to demonstrate compliance with this requirement, by means of a user guide or product leaflet. All products with a relevant EU Ecolabel will be assumed to be in compliance. Likewise, products with a different Type 1 environmental label or an environmental declaration meeting this criterion will be assumed to be in compliance. Other appropriate forms of documentation will also be accepted, such as a technical file from the manufacturer or an approval report of an accredited institution (for example, an ISO 17025-accredited institution authorised to issue approval reports) showing that the products meet the criteria. *Explanation* For an explanation of the type I environmental labelling, see the explanation at ME1 and http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm. For information on ISO 17025 with regard to performance of trials and calibrations, see http://www.nen.nl/NEN-Shop/Norm/NENENISOIEC-170252005-nl.htm.

6. Award criteria

No.	Award criteria (GC)
GC1	**Options for assembly and recycling** The easier the products are to disassemble and the more recyclable the plastic parts are, the higher this section of the tender will be rated: • Connections are easy to find, accessible with standard tools and standardised to the maximum possible extent. • Plastic parts heavier than 25 g are identified with a permanent manufacturer's mark in accordance with ISO 11469:2000 or equivalent standard to identify the material. This criterion does not apply to extruded plastic materials or the light conductor of flat screens. • Plastic components must consist of a single polymer or compatible polymers, excepting the housing, which must consist of no more than two separable types of polymer. *Verification* The tenderer may be asked to submit a test report with details concerning the disassembly of the personal computer. This report must include an explosion drawing of the personal computer indicating the most important components and any hazardous substances in the parts. The report may be submitted in written or audiovisual form. Information on hazardous substances must be provided to the competent authority in the form of a list of materials indicating the types of material, the quantity used and the places they are used. *Source EU GPP*
GC2	**Recycled material and recyclability (for PCs, notebooks and monitors)** The higher the percentage by weight of the external plastic housing of the system unit, screen and keyboard made of post-consumer recycled materials, the higher this component of the tender will be rated. This percentage by weight of post-consumer recycled material must be at least 10%. *Verification* The tenderer may be requested to provide a declaration of the percentage of post-consumer recycled material. *Source: EU GPP*
GC3	*(In connection with the European Energy Efficiency Directive 2012/27/EU, this award criterion is mandatory for national government procurement tenders).* **Most energy-efficient PCs and notebooks** Points are assigned for every 5% of energy consumption lower than the specifications in Technical Specification ME1 Energy Star requirements for computer and/or monitor. *Verification* The tenderer they be requested to submit a technical file from the manufacturer. The substantiation is to comprise the submission of the TEC value (and accompanying test report) the manufacturer uses to show that the product is indeed x% better.
GC4	**Transparency regarding the origin of hardware and mobile appliances** If the tenderer undertakes to keep a list recording the places where the products in question (end product) are produced for all the products it supplies, additional points may be earned for this component. This will involve the following details: • the country; • the region; • the factory where the hardware is produced. If the tenderer undertakes to meet this award criterion, it must be able to provide the information digitally, in the form of an Excel spreadsheet, within two working days of the contracting authority's requesting such information. If the tenderer undertakes to perform this award criterion, it may

	record information in a single CMDB (configuration management database).
GC5	**Most energy-efficient cordless telephones for a landline connection** Points will be awarded if the energy consumption is lower than that specified in the ME3 "Energy Star" requirements in technical specification for networks. Additional points will be awarded for every 5% below the requirements. *Verification* The tenderer may be asked for a technical file produced by the manufacturer. A test report showing the products' energy consumption will also be accepted.
GC6	**Recycling packaging** The greater the provision made by the tenderer for better recycling of the packaging, the higher this component of the tender will be rated. The tenderer may earn points by: - avoiding multi-layers, black plastic and combination packaging; - using packaging which is readily recyclable; - collecting and recycling a higher percentage of the packaging it supplies. *Verification* The tenderer may be asked to state: - whether multi-layers, black plastic and combination packaging are used; - whether the packaging is readily recyclable, where "readily recyclable" is defined as: can be separated by hand into elements of a single material and/or packaging which are suitable for multiple use; - what percentage of the packaging it supplies is collected and recycled. The tenderer may be asked to send a sample of the packaging. It may also be asked to send a statement in which it indicates 1) what percentage of the packaging used is collected or taken away 2) how the packaging used is processed during the waste phase and, 3) in the case of recycling, which recycler recycles the material.

7. Contract provisions

Not defined for this product group.