



**Environmental criteria for sustainable public
procurement of**

Networks, Telephone Services & Telephone Equipment

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1. Scope/definition

This document deals with three ICT-related product groups at the same time. These product groups are interrelated in a way that is subject to continuous change. First of all, it is currently possible to digitise all electronic functions (equipment and software). Second, due to the increasing availability of electronic connections and the broadband transmission capacity of networks and infrastructure, it is possible to remove, relocate and share functions from existing equipment. For these reasons it was decided to create a consolidated criteria document. This document deals with three product groups:

- networks/infrastructure
- telephone equipment
- telephone services

The following products (with their corresponding CPV codes) are part of the product group Networks, Telephone Services & Telephone Equipment. This list of products is not intended to be exhaustive.

Products	CPV code
Networks/Infrastructure	
System and support services	72250000
Data processing services	72310000
Computer-related management services	72510000
Computer-related professional services	72590000
Computer networking services	72700000
Telephone Equipment	32400000
Telephone Equipment	
Telecommunication needs	32500000
Criteria have been developed for wireless landline phones	32552110
<i>No criteria have been developed for mobile phones and other landline phones.</i>	
Telephone Services	
Telecommunications services (no criteria have been developed for this purpose)	64200000

The scope of this product group does not include:

- cabling, repeaters and all other equipment not otherwise specified.

2. Most significant environmental impacts

The following tables list the sustainability themes and describe the approach to each theme for the Networks, Telephone Services & Telephone Equipment 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 in the use phase, with corresponding CO ₂ emissions Energy consumption in the production phase, with corresponding CO ₂ emissions	<ul style="list-style-type: none"> Procure energy-efficient services 	ME4, GC1, CB1, CB2
	<ul style="list-style-type: none"> Procure energy-efficient equipment 	AS2, AS3, ME1, ME2, ME3, ME5, GC2, GC3, GC4
Supplies and raw materials Recycling, reuse	<ul style="list-style-type: none"> Service for reuse and recycling 	AS6

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 which differ from the standard minimum requirements and award criteria set out in this document. The following table presents points for attention and suggestions for promoting sustainability in procurement within this product group.

No.	Points of attention/suggestions (AS)
AS1	Evaluate reliability and availability of data connections Assess the required reliability and availability of data communications. For non-critical applications, a reduced level of reliability may be sufficient. This can be combined with reduced power consumption.
AS2	Consider "Best Practices" Consider the best practices in "Energy savings in datahotels" (ECN 2008) or the Code of Conduct (European Commission JRC 2008). These cover the following subject areas: cooling, electrical power supply (including UPS), the building, other installations, management and use of the data centre, ICT equipment and the monitoring of power consumption.
AS3	Analyse and monitor total energy consumption In the analysis and monitoring of the total energy consumption, subdivide the total power consumption into components. Some modern equipment includes features for reporting power consumption. This can also be accomplished through means of intelligent Power Distribution Units (PDUs), which are able to read this information. Furthermore, there are all kinds of "smart plugs" that can easily be placed between the electrical outlet and the equipment's electrical plug. Certain systems exist that can collect consumption data via wireless communications after which it can be analysed using separate software.
AS4	Get server hardware that conforms to the Energy Star criteria Purchase server hardware that is in compliance with the relevant Energy Star criteria.
AS4	Integrated approach to entire ICT chain Consider an integral approach to the entire ICT-chain, including the end-users.
AS5	Utilise hardware efficiently Ensure efficient utilisation of the hardware (server, storage, network) and disconnect any non-essential components. Utilisation of resources of more than 80% is considered optimal. To date an official utilisation benchmark does not yet exist, however. The key technologies that make efficient hardware utilisation possible are: <ul style="list-style-type: none"> Virtualisation: the separation of information and software from physical resources. Virtualisation, for example, makes it possible to consolidate multiple processes on the same server, as a result of which it is possible to shut down part(s) of the equipment. Provisioning/Move technology: the automated and dynamic allocation of physical resources to data and applications/the ability to transfer a data or application workload to another physical resource without any interruptions (cloud computing). Power management: the ability to use automated means for managing the power

	consumption of hardware and to completely or almost completely shut off the hardware.
AS6	Service for reuse and recycling hardware Promote high-quality reuse of end-of-life hardware, 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 categorization of the end-of-life hardware, deletion of data from all data-carrying hardware (AIVD requirement), maximizing lifetime and value of the hardware through reuse and recycling of hardware that cannot be reused.

4. Selection criteria

Not defined for this product group.

5. Technical specifications

No.	Technical specifications (ME)
ME1	<p>Energy Star criteria for UPS equipment UPS equipment meets the requirements of the most recent version of the Energy Star standards for energy performance. See www.eu-energystar.org.</p> <p><i>Explanation</i> As from 7 May 2014, UPS equipment must meet the Energy Star standards version 1.0.</p> <p><i>Verification</i> The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. Products in the Energy Star database (see http://www.eu-energystar.org/nl/database.shtml) are in compliance. Products with a relevant type 1 environmental label or environmental declaration answering to the listed criteria will also be assumed to be in compliance. Other appropriate forms of documentation will also be accepted, such as a technical file from the manufacturer or approval report of an accredited institution (for example, an ISO 17025-accredited institution authorised to issue approval reports) showing that the products answer to the criteria.</p> <p>For an explanation of type I environmental label, see: http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm</p> <p>For information on ISO 17025 in reference to performance of trials and calibrations, see: http://www.nen.nl/NEN-Shop/Norm/NENENISOIEC-170252005-nl.htm</p>
ME2	<p>'Energy Star' requirements for broadband equipment Broadband equipment must meet the requirements as described in Appendix C.2 of the most recent version of the Code of Conduct on Energy Consumption of Broadband Equipment (European Commission). See http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/code_of_conduct_broadband_equipment_v4_1_final.pdf.</p> <p><i>Verification</i> The tenderer can be asked to produce a user guide or product leaflet demonstrating that this requirement is met.</p>
ME3	<p>Energy consumption of telephone equipment: wireless landline telephones Wireless landline telephones are in compliance with the most recent version of the Energy Star criteria. See http://www.energystar.gov/index.cfm?c=phones.pr_crit_phones</p> <p><i>Verification</i> The tenderer can be asked to produce a user guide or product leaflet demonstrating that this requirement is met. Products with a relevant type 1 environmental label or environmental declaration answering to the listed criteria will also be assumed to be in compliance. Other appropriate forms of documentation will also be accepted, such as a technical file from the manufacturer or approval report of an accredited institution (for example, an ISO 17025-accredited institution authorised to issue approval reports) showing that the products answer to the criteria.</p>

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ME4	<p>Energy consumption of networks/infrastructure: services – Housing</p> <p>A data centre that is used for data housing, at least the portion that is used for implementing the contract, must have a yearly average Data Centre infrastructure Efficiency (DCiE) value of at least 50%.</p> <p><i>Explanation</i></p> <p>The DCiE is the ratio consisting of the annual electricity consumed by the IT equipment divided by the annual electricity consumed by the entire data centre. This number reflects the share of the power consumed by the IT equipment. A higher value means a higher data centre efficiency.</p> <p>The commonly used parameter EUE (Energy Usage Effectiveness) is equal to 1/DCiE.</p> <p><i>Verification</i></p> <p>The tenderer may be asked to substantiate, with documentation, compliance with a DCiE of 50% or greater.</p>
ME5	<p>'Energy Star' requirements for servers</p> <p>Servers meet the requirements of the most recent version of the Energy Star criteria. See www.eu-energystar.org.</p> <p><i>Explanation</i></p> <p>As from 7 May 2014, computer servers must meet the Energy Star standards version 2.0.</p> <p><i>Verification</i></p> <p>The tenderer may be asked to submit documentation demonstrating compliance with the criteria above. Products in the Energy Star database (see http://www.eu-energystar.org/nl/database.shtml) are in compliance. Products with a relevant type 1 environmental label or environmental declaration answering to the listed criteria will also be assumed to be in compliance. Other appropriate forms of documentation will also be accepted, such as a technical file from the manufacturer or approval report of an accredited institution (for example, an ISO 17025-accredited institution authorised to issue approval reports) showing that the products answer to the criteria.</p> <p>For an explanation of type I environmental label, see: http://www.nen.nl/NEN-Shop/Norm/NENENISO-140242000-en.htm</p> <p>For information on ISO 17025 in reference to performance of trials and calibrations, see: http://www.nen.nl/NEN-Shop/Norm/NENENISOIEC-170252005-nl.htm</p>

6. Award criteria

No.	Award criteria (GC)
GC1	<p>Most energy-efficient network/infrastructure: services – Housing</p> <p>The greater the degree to which a data centre used for data housing, or at least the portion that is used for implementing the contract, has a yearly average Data Centre infrastructure Efficiency (DCiE) value lower higher than 60%, the higher the tender will be rated, in accordance with the following formula:</p> <p>Number of points = (DCiE-60%) * [x] points</p> <p><i>Explanation</i></p> <p>The DCiE is the ratio consisting of the annual electricity consumed by the IT equipment divided by the annual electricity consumed by the entire data centre. This number reflects the share of the power consumed by the IT equipment. A higher value means a higher data centre efficiency.</p> <p>Based on (Energy savings in datahotels; more with less, ECN 2008), it may be expected that the</p>

	<p>tendered DCiE will vary between 50% and 90%, so that a number of points between 0 and 30* [x] can be earned here. The purchaser must determine the value of [x].</p> <p>It is recommended that the purchaser assesses whether the higher DCiE affects the pricing.</p> <p>The commonly used parameter EUE (Energy Usage Effectiveness) is equal to 1/DCiE.</p> <p><i>Verification</i> The tenderer may be asked to substantiate, with documentation, compliance with the criteria above.</p>
GC2	<p>Most energy-efficient UPS equipment Points are assigned for every 5% of energy consumption lower than the specifications in the minimum requirement ME1 Energy Star requirements for UPS equipment.</p> <p><i>Verification</i> The tenderer they be requested to submit a technical file from the manufacturer. A test report showing the energy consumption of the products will also be accepted.</p>
GC3	<p>Most energy-efficient wireless landline telephones Points are assigned for every 5% of energy consumption lower than the specifications in the minimum requirement ME3 Energy Star requirements for telephone equipment.</p> <p><i>Verification</i> The tenderer they be requested to submit a technical file from the manufacturer. A test report showing the energy consumption of the products will also be accepted.</p>
GC4	<p>Most energy-efficient servers Points are assigned for every 5% of energy consumption lower than the specifications in the minimum requirement ME5 Energy Star requirements for servers.</p> <p><i>Verification</i> The tenderer they be requested to submit a technical file from the manufacturer. A test report showing the energy consumption of the products will also be accepted.</p>

7. Contract provisions

No.	Contract provisions (CB)
CB1	<p>Energy consumption of Networks/infrastructure: services – Hosting The data hosting contractor reports quarterly (or in accordance with a higher frequency mutually agreed upon) on the electricity consumed by the equipment involved in the performance of the contract, to the contracting authority. Consumption is specified in terms of hourly values.</p> <p><i>Explanation</i> This provision is designed to provide the contracting authority with insight into the possibilities of influencing the power consumed by the ICT activities.</p> <p>It is recommended that the purchaser specify the reporting format in mutual consultation, depending on what the contracting authority can and wants to do with the data. Some providers have access to a software platform for this purpose.</p>
CB2	<p><i>(Optional)</i></p> <p>Energy consumption of Networks/infrastructure: services – Housing The higher the degree to which during any one contract year, an improvement in the DCiE is achieved in relation to the DCiE at the outset of the contract, the more the contractor is entitled to a bonus for the next [contract period] in accordance with the following formula:</p> <p>Bonus (in €) = { DCiE(improved) - DCiE(start of contract) } * [x] Improvements in the DCiE must be supported by a report prepared by an independent expert.</p> <p><i>Explanation</i> The DCiE is the ratio consisting of the annual electricity consumed by the IT equipment divided by the annual electricity consumed by the entire data centre. This number reflects the share of the</p>

	<p>power consumed by the IT equipment. A higher value means a higher data centre efficiency.</p> <p>This provision encourages the contractor to improve the annual weighted Data Centre Infrastructure Efficiency (DCiE).</p> <p>Based on (Energy savings in datahotels; more with less, ECN 2008) and the minimum DCiE requirement, it is expected that the proposed DCiE will vary between 50% and 90%, so that the theoretical maximum improvement that can be achieved is 40%. If, for example, 1,000 is chosen as the value "x". then an improvement of 40% in the DCiE as described above yields a bonus of € 400.</p> <p>The commonly used parameter EUE (Energy Usage Effectiveness) is equal to 1/DCiE.</p> <p><i>Verification</i></p> <p>To qualify for this bonus, the DCiE at the outset of the contract can be established. Depending on the nature of the service, the representative contract period for the bonus can be established.</p> <p>Information such as the monitoring data collected in the context of participation in the Long-term Agreement on Energy Efficiency (MJA) or the Code of Conduct can serve as the expert's report.</p>
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