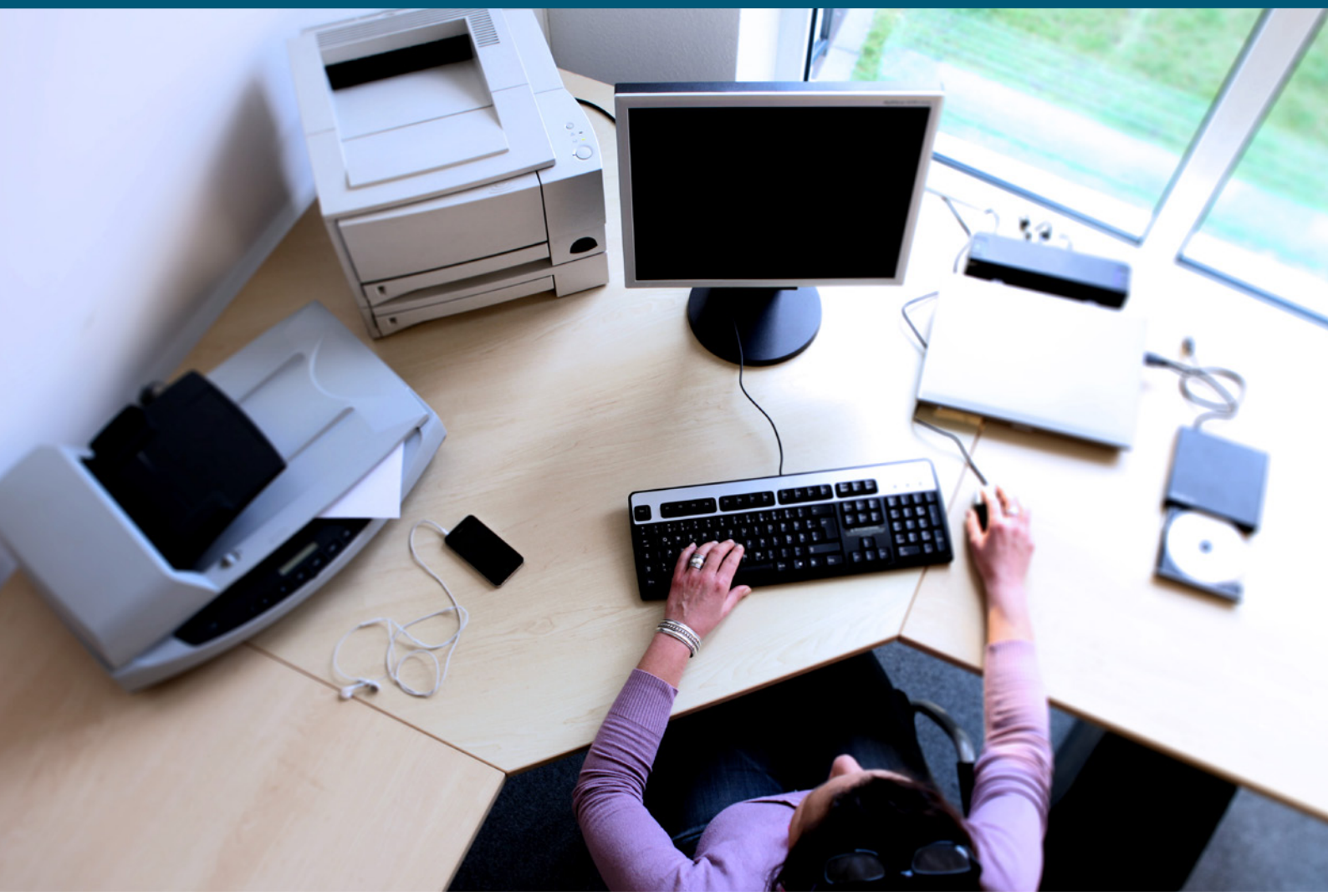

Recommendations for the environmentally friendly procurement of desktop PCs

Guidelines Version 2.0

BITKOM

Umwelt Bundes Amt
Für Mensch und Umwelt

BESCHAFFUNGSAMT
des Bundesministeriums des Innern

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Contents

Introduction

This guideline has been created by a workgroup made up of members from the Beschaffungsamt des Bundesministeriums des Innern (BeschA) [Federal Interior Ministry Procurement Office], the Bundesverband Informationswirtschaft, Telekommunikation und neue Medien e.V. (BITKOM) [Federal Association for Information Management, Telecommunications and New Media] and the Umweltbundesamt (UBA) [Federal Environment Agency].

The goal of this document is to provide public, order-awarding and procurement agencies at federal, state and municipal levels – as well as company purchasers and institutional procurers, such as churches and associations – with a reliable and comprehensible aid for observance of environmental aspects in the procurement of desktop PCs.

Protection of the environment is one of the most important tasks of our time. Information and telecommunications technology (ITC) can make a significant contribution to this task. Aside from matters of energy consumption and emission of greenhouse gasses, there are also other aspects to be addressed from an environmental perspective such as the conservation of natural resources by increasing material efficiency, improving health protection by lowering acoustic emissions, and the reduction of substances which can have negative effects on the environment.

In this context, both the manufacturer and the purchaser of ITC equipment are challenged to be responsible. The manufacturer is challenged to develop and offer energy and resource efficient products, the purchaser to actually request environmentally friendly products so that they can gain widespread market acceptance. Both sides make an essential contribution toward achieving sustained supply and demand market patterns; they are directly interrelated.

This guideline is an attempt to influence the demand side. Public order-awarding and procurement agencies play a key role here. Because the combined total of federal, state and municipal expenditures amount to about 250 billion € annually (17 billion € of this for ITC products), these agencies exert enormous market influence. This market influence should be aimed at demand for environmentally friendly products in order to stimulate technical and systematic innovation and to realize environmentally positive effects like reductions in CO_2 emissions, energy or resource consumption. In the framework of the national sustainability strategy, the German federal government has acknowledged its leadership position in public procurement.

However, the observance of these objectives in daily procurement practice is often coupled with difficulties. There is general uncertainty about how relatively abstract environmental goals are to be "translated" into specific requirements founded on target values and certification regulations.

Beschaffungsamt, BITKOM and UBA have therefore joined together under the umbrella of the national dialog process for promoting sustainable supply / demand behavior to establish joint recommendations for environmentally-friendly procurement of selected ITC equipment product groups. These recommendations are oriented on five basic principles which are summarized on page 10.

The most recent version of this guideline can be found online at www.ict-procurement.org.

1 Prolonging service life, return and recycling

Environmentally sound product design is a decisive element for the long-term utilization of products. Modular construction permits function and performance enhancements to be added readily and also simplifies repair when necessary. Modular construction also ensures a high rate of product recycling.

1.1 Modular structure

Criteria	Proof
Award	Manufacturer declaration with reference to technical specification (pursuant to guideline "Product-Neutral Bidding Procedure", Chapter 4)

The system unit is built in modules so that components can be replaced, or the system can be upgraded, without need of special tools. Replacements and / or upgrades are particularly applicable to:

- working memory (i. e. RAM)
- hard disk/s
- other disk drives
- any of various expansion cards (graphic, sound, network, etc.) and CPU

1.2 Replacement parts stock

Criteria	Proof
Award	Manufacturer declaration

Mechanical replacement parts which may become necessary because of normal usage (e. g. HDD, DVD) are available for at least 5 years after delivery date. Components or parts which routinely outlast the average service life of the product need not be stocked as replacement parts.

1.3 Marking of plastic parts > 25 g

Criteria	Proof
Award	Manufacturer declaration

Plastic parts having a mass in excess of 25 grams are to be permanently marked per ISO 11469:2000.

1.4 Free-of-charge return of old ITC equipment

Criteria	Proof
Exclusion	Manufacturer declaration

The customer must be able to turn in old equipment without charge to a recycling location named by the supplier which is compliant with Electrical and Electronic Equipment Act – "ElektroG" (electrical law, section 10, paragraph 2).

2 Energy

From the life cycle perspective of a PC, its energy efficient operation is the most important aspect with the greatest potential for savings. Energy efficient equipment lowers operating cost and reduces CO_2-Emissions.

2.1 ENERGY STAR

Criteria	Proof
Exclusion	1. Manufacturer declaration and 2. Test report per ENERGY STAR V 5.0 test procedure or a document containing the following information: ■ Name of the test laboratory (external or company-internal testing institute) ■ Signature of authorized laboratory person (e. g. laboratory manager) ■ Proof of compliance with requirements according to 2.1 Test report or document only on demand prior to bid award

The device complies in full with the requirements of the latest valid ENERGY STAR program for desktop PCs (www.eu-energystar.org).

Current requirements of ENERGY STAR V5.0 for desktops (valid from July 2009):

Typical Energy Consumption (TEC):

- Category A: ≤ 148.0 kWh
- Category B: ≤ 175.0 kWh
- Category C: ≤ 209.0 kWh
- Category D: ≤ 234.0 kWh

The TEC value represents the typical annual electricity consumption of the respective device. This is measured in kilowatt hours (kWh) using an accepted typical working cycle.

The following can be added to the TEC as an option:

- 1 kWh for every GB of memory exceeding the base (base memory = 2 GB for categories A–C, 4GB for category D)
- 25 kWh for additional internal storage
- 35 kWh (categories A–B, frame buffer ffi 128-bit) resp. 50 kWh (categories A–D, frame buffer > 128-bit for "Premium Graphics"

The current criteria can be found online at www.energystar.gov.

2.2 Energy requirements according to the Blue Angel

Criteria	Proof
Award	Manufacturer declaration

The device complies in full with the latest valid criteria for awarding public contracts in accordance with the Blue Angel for computers.

Current requirements of the Blue Angel for Portable Computers RAL-ZUZ 78d (version from March 2013):

Typical Energy Consumption (BE-TEC):

- Category A: ≤ 88,8 kWh
- Category B: ≤ 131,25 kWh
- Category C: ≤ 156,75 kWh
- Category D: ≤ 163,8 kWh

The current requirements of the Blue Angel can be viewed at www.blauer-engel.de.

2.3 Energy management

Criteria	Proof
Exclusion	Manufacturer declaration

The device is to be delivered with energy management activated per given valid stage of the ENERGY STAR Program for Computers.

- As delivered, the monitor's idle mode must be set to activate after 15 minutes of user inactivity.
- As delivered, the idle mode for all devices, except for servers with desktop connections, must be set such that it will activate after 30 minutes of user inactivity.

2.4 Information on energy consumption

Criteria	Proof
Exclusion	Manufacturer declaration

The TEC value must be specified in kilowatt hours (kWh) as prescribed by VgV Section 4(6)1 (German regulations on the awarding of public contracts).

2.5 On and Off switches

Criteria	Proof
Exclusion	Manufacturer declaration

The device must support an ACPI compliant operating system. It must have an on/off switch. This switch must be located on the device's front side. When the device is switched off, activation of the switch must at least put the device into its off mode state (ACPI S5 or equivalent).

Other potential savings with respect to energy consumption

Some devices have no line switch which totally remove them from the source of line power. They consume energy even when they are supposedly switched off. There are three possibilities to further reduce electric power consumption

- Electric power consumption can be reduced to zero by pulling the power plug from its outlet after the computer has been shut down.
- Alternatively, this can also be accomplished with a power outlet strip that has an manual on/off switch. One should note that both of these options make the PC inaccessible to certain applications – such as updates – but this can be resolved by organizational procedures.
- A third option is to use a power outlet strip which has master/slave capabilities such that multiple electrical devices (e. g. PC, monitor, printer) can be switched on/off simultaneously. When the load on the master outlet (typically the PC) is switched on or off then the slave outlets are also automatically switched on or off. In addition to user convenience, access to the PC is maintained for certain applications – such as updates. However, this variant with a master/slave power outlet strip cannot reduce power consumption to 0 because the power outlet strip itself consumes a certain amount of power (about 1 Watt). Furthermore, master/slave power outlet strips are significantly more expensive than manually-switched power outlet strips.

3 Acoustic noise emissions

Acoustic noise is a significant factor so devices located in the immediate vicinity of the workplace should operate as quietly as possible. Low-noise devices make a contribution to health protection.

Guaranteed acoustic noise level, as determined on the basis of EN ISO 7779 in conjunction with ISO 9296, is to be specified in Bel (B).

3.1 Limitation for acoustic noise level per ITI TC6

Criteria	Proof
Exclusion	1. Manufacturer declaration and 2. Test report per ISO 7779 from an organization accredited per ISO 17025, or a document containing the following information: ■ Name of the test laboratory (external or company-internal testing institute) ■ Accreditation certificate of the test laboratory per ISO 17025 for measurements per ISO 7779 ■ Signature of authorized laboratory person (e. g. laboratory manager) ■ Acoustic noise emission values in Bel (B)

The noise emission (LWAd) should not exceed 4.50 B in idle mode and 4.80 B when in operation (activation of the hard drive).

3.2 Limitation for acoustic noise level per Blue Angel

Criteria	Proof
Award	Manufacturer declaration

The acoustic noise level does not exceed 3.50 B in idle mode and 4.20 B when in operation (activation of the hard drive).

4 Material characteristics / substance related requirements

Computers are made of a myriad of individual components and different substances. Their impact upon introduction into the environment, as well as burdens to health at the workplace, can be reduced by excluding problematic and hazardous substances.

4.1 Exclusion of certain halogen compounds

Criteria	Proof
Exclusion	Manufacturer declaration

Plastic enclosure substances are not to be made of polymers with halogen content (e. g. PVC). Furthermore, no flame retarding agents containing chlorine or bromine are to be added to plastic enclosure parts > 25 g.

4.2 Exclusion of certain substances

Criteria	Proof
Exclusion	Manufacturer declaration

Substances classified by EC regulation no. 1272/2008 Annex VI as having the following hazardous properties may not be added to plastic materials in computer enclosures (parts > 25g):

- Carcinogenic substances of category 1A, 1B
- Germ cell mutagenic substances from categories 1A, 1B
- Reproductive toxic substances from categories 1A, 1B

4.3 Packaging

Criteria	Proof
Exclusion	Manufacturer declaration

Plastics containing halogen are not to be used. Plastics used in device packaging must not contain halogenated polymers (e. g. PVC).

5 Manufacturer declarations, test reports and user information

Criteria	Proof
Exclusion	Manufacturer declaration, test reports, manuals

Proof of compliance with the criteria indicated may be provided through manufacturer declarations or test reports depending on the respective criterion. Technical, environmental and health-relevant user information supports the user in ways that include the correct handling of desktop PCs with respect to matters of the environment and health.

In the case of products bearing the Blue Angel environmental label, it may be assumed, pursuant to Section 8 (5) VOL/A-EC (accordingly for the sub-threshold values), that they demonstrably fulfil all criteria indicated here. No separate Proof of compliance is required for such products. Please note that although the Blue Angel may be admitted as Proof (in addition to other suitable proof), it is no substitute for the inclusion of the aforementioned technical criteria in the product specification.

This could be formulated as follows:

- Manufacturer declarations (e. g. Eco Declaration ECMA-370) and test reports per ENERGY STAR, Blue Angel or the like may be submitted in German or English.

- Manuals containing technical, environmental and health-relevant user information are available electronically in German e. g. as a CD or for download.

6 Appendix

The recommendations are oriented on five fundamental principles:

- Steering effect: Use of the procurement portal should induce suppliers (industry) and enquirers (procurement officers for public entities, companies and organizations) to improve the environmental friendliness of ITC devices. When enquirers increasingly purchase the most environmentally friendly devices, this will generate incentives in industry to further promote efforts with respect to environmentally friendly devices

- Environmentally sound friendliness: PCs which meet the criteria listed here can be counted among those which are currently the most environmentally sound. The principle to be followed in a procurement decision is to choose the most ecologically efficient system solution.

- Ambitious and accomplishable requirements: The goals must be ambitious in order to reflect the most environmentally sound devices on the market (status quo) and simultaneously stimulate trends (development potential). At the same time, the requirements should not be too challenging so that only a marginal share of market participants could fulfill them.
  This present guideline solves this challenge with the use of exclusion and award criteria.

- Comprehensibility: Procurers should be able to understand the significance of the criteria. The selection and formulation of criteria is therefore organized according to the following principles:

  - decisive environmental criteria ("quality")
  - manageable number ("quantity")
  - unambiguous presentation ("legibility")

- Verifiability: Procurers should be able to check whether devices truly meet the values provided in the "self-declarations". The guideline therefore calls for standardized test procedures that yield measurement values which can be reproduced (verified) and repeated (for example, by an "accredited testing laboratory" or "third-party audit certification").

The criteria established in this present guideline can be used directly in the tender documents. The incorporation of environmental aspects in the tender documents is not critical with respect to the legal aspects of bidding procedures. German contracting rules (VOL/A, VOB/A and VOF) explicitly state that environmental aspects may be a part of technical requirements and that environmental characteristics represent permissible award criteria.

A general introduction to the subject of green procurement as well as notices about special requirements for various different stages of the bidding process can be found, for example, in the "Handbook on environmental public procurement" published by the European Commission.

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The German Association for Information Technology, Telecommunications and New Media (BITKOM) represents more than 2,100 companies in Germany. Its 1,300 direct members generate an annual turnover of more than 140 billion Euros and employ 700,000 people. They include more than 900 small and medium-sized enterprises, over 100 start-ups as well as nearly all global players. BITKOM represents providers of software and IT, telecommunications and Internet services, manufacturers of hardware and consumer electronics, as well as digital media and Internet economy businesses.

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