# Buy Smart+
# Green Procurement in Europe

# Office Equipment

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- Tipps for procurement
- Tipps for usage

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# Relevance of energy efficiency

- With the procurement of each IT equipment the maintenance costs are settled for the next 5-6 years
- IT equipment currently consumes 55 TWh in Germany, which is 10% of the overall electricity consumption in the country
- The IT relevant energy consumption will rise more than 20% in Germany until 2020
- Office equipment consumes altogether about 6,5 billion kWh per year in idle state. That equals 1,4% of Germany's energy consumption and 4,6 million tons of $CO_2$
- There is a saving potential up to 50% percent in the area of IT equipment

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# Why purchase green office equipment?

- 15 million computers sold every year in Europe
- Compliance with European policies
- Energy supply security
- Fight against climate change
- Raw material consumption, production of wastes and toxic substances
- Costs for cooling are reduced

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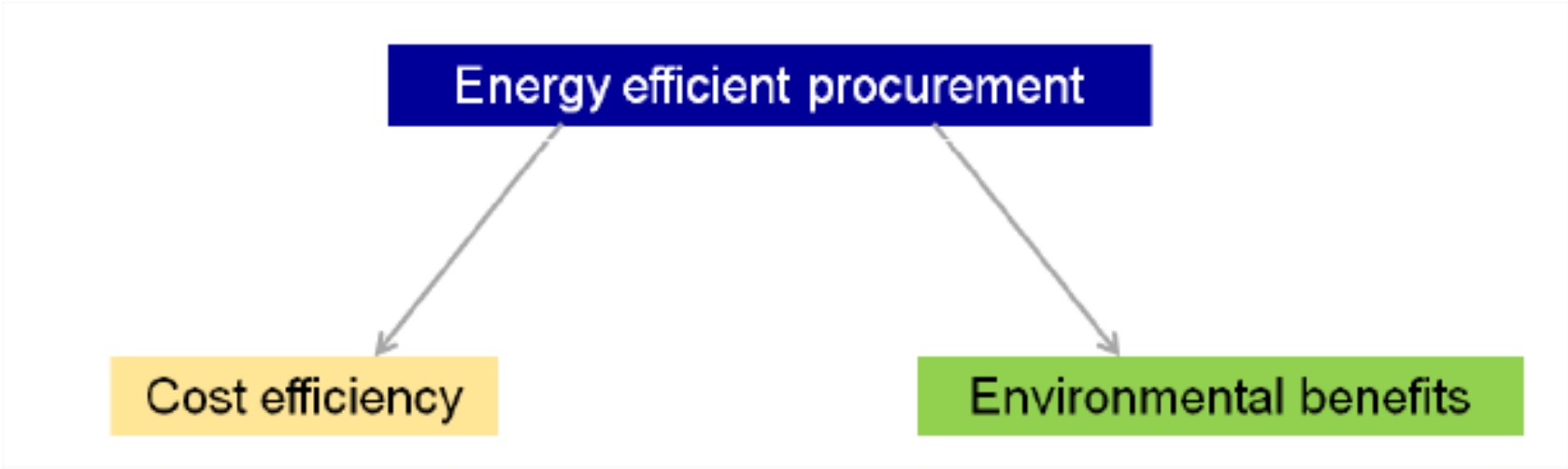
# Advantages

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# New technologies and future trends

- Rise in equipment ownership rates
- Shorter intervals between purchases
- Equipment use practices remain unchanged

  ➡ Risks of an increase in office-based electricity consumption

Potential savings realized by:

  – Purchasing energy-saving equipment

  – Enhancing user awareness of energy-reducing techniques

  – Managing the device end-of-life phase

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# Product groups

- Computer
- Laptops
- Thin Clients
- Printers
- Multifunction devices
- Copier
- Printer
- Scanner
- Telephone Systems
- (Data Centres)

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# Label

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# Energy Star

- Only minimum criteria for energy efficiency
- www.eu-energystar.org

Product groups

- Imaging equipment (printers, scanners, fax machines, photocopiers, etc.)
- Desktop computers
- Laptop computers / notebooks
- Thin Clients
- Monitors
- (Servers)

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# Operational Modes

Off Mode:

The power consumption level in the lowest power mode which cannot be switched off (influenced) by the user and that may persist for an indefinite time when the appliance is connected to the main electricity supply and used in accordance with the manufacturer's instructions. For systems where ACPI standards are applicable, the Off Mode correlates to ACPI System Level S5 state.

Sleep Mode:

A low power state that the computer is capable of entering automatically after a period of inactivity or by manual selection. A computer with sleep capability can quickly 'awake' in response to network connections or user interface devices with a latency of ≤ 5 seconds from initiation of wake event to the system becoming fully usable, including rendering of display. For systems where ACPI standards are applicable, the Sleep mode most commonly correlates to ACPI System Level S3 (suspend to RAM) state.

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# Operational Modes

Idle State:

The state in which the operating system and other software have completed loading, a user profile has been created, the machine is not asleep, and activity is limited to those basic applications that the system starts by default.

Active State:

The state in which the computer is carrying out useful work in response to (a) prior or concurrent user input or (b) prior or concurrent instruction over the network. This state includes active processing, seeking data from storage, memory, or cache, including idle state time while awaiting further user input and before entering low power modes.

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# TEC

Typical Energy Consumption (TEC):

A method of testing and comparing the energy performance of computers, which focuses on the typical electricity consumed by a product while in normal operation during a representative period of time. For Desktops and Notebooks, the key criterion of the TEC approach is a value for typical annual electricity use, measured in kilowatt-hours (kWh), using measurements of average operational mode power levels scaled by an assumed typical usage model (duty cycle).

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# European Ecolabel

- Technical and environmental performance standards
  - consume less energy when running and in standby mode
  - contain fewer hazardous substances for human health and the environment
  - may be picked up free of charge by the supplier at the end of its useful life
  - can be easily disassembled and recycled
  - life span is extended through the possible implementation of updates
  - less polluting batteries

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# TCO

- Ergonomic and energy consumption criteria (= Energy Star), electromagnetic field emissions and ecological criteria (heavy metals, hazardous substances found in packaging). Priority assigned to safety.
- Approx. 50% of screens are certified, just a limited number of desktop computers
- http://tcodevelopment.com

**Product groups**

- Displays
- Notebooks
- Tablets
- Desktops
- All-in-One PCs
- Projectors
- Headsets


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# Blue Angel

- Criteria have been established for the majority of office computer equipment
- These criteria take into consideration:
  - recycling as of product design,
  - pollution mitigation during manufacturing,
  - energy consumption reductions (standby mode receives priority attention),
  - chemical emissions,
  - noise,
  - end-of-life computer equipment disposal
- http://blauer-engel.de/en/index.php

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# Nordic Swan

- Covers computers, photocopiers and printers
- The evaluation criteria are based on:
  - reduced water
  - energy consumption
  - fewer toxic chemical products
  - recycling
  - waste reuse
- www.nordic-ecolabel.org

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# Epeat

- Covers computers and electronic devices
- Mandatory and optional evaluation criteria are based on:
  - hazardous substances
  - environmentally-friendly components
  - equipment end-of-life issues
  - equipment longevity
  - Energy Star
  - recycling potential
  - corporate environmental certification
  - packaging
- www.epeat.net

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# Tips for procurement

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# Tips for procurement

- Before proceeding with a purchase, determine the actual needs (inventory existing equipment and describe current practices).
- Do not systematically renew purchases; first assess the alternatives available, study actual and current needs on a case-by-case basis.
- Prioritise the purchasing of hardware that meets specifications of the various existing labels and/or draw up a benchmark based on current guidelines.
- Purchase energy efficient models with energy management systems; compare the life cycle costs of the products
- Buy printers with duplex function
- Protecting user health and safety by: mitigating nuisances due to noise and electromagnetic radiation, preventing contact with certain noxious substances

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# Tips for procurement

- Laptop computers consume between 50% and 80% less energy than workstations
- LCD screens consume 60% less than monitors when in operating mode
- Thin clients consume about 20% less energy, including the server; the lifetime of thin clients is 7 years in average, while computers have an average lifetime of 4 years
- Thermal photocopiers are the most energy efficient
- A multifunction device consumes less than the sum of the various machines it is designed to replace

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**Thin client**

An independently-powered computer that relies on a connection to remote computing resources to obtain primary functionality. Main computing (e.g., programme execution, data storage, interaction with other Internet resources, etc.) takes place using the remote computing resources.



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# Tips for procurement

- Limiting resource consumption during product manufacturing through reliance on recycled raw materials and on product designs featuring sustainability and ease of recycling
- Reducing equipment end-of-life waste volumes through possible functional extensions
- Decrease the quantity of packaging used
- Ensure the recyclability of the packaging used
- Increase the use of recycled packaging

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# Procurement Policies

- GPP Toolkit or
- Minimum criteria:

  All products must meet the latest ENERGY STAR standards for energy performance
- Award criteria:
  - The product complies with the criteria of the EU Ecolabel
  - Life cycle costs are calculated

    http://www.eu-energystar.org/en/calculator.shtml

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# Tipps for usage

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# Tips for usage

- Activate the energy saving settings of devices
- Centralize office equipment
- Turn computers and monitors off
- Disconnect power supplies and chargers of laptops and mobile phones
- Remove any unnecessary programs / files / services.
- The consumption of an off-mode computer can be up to 15 Watt; use switchable multiple sockets and timer switches
- Turn on peripherals only when necessary
- Have your equipment picked up at the end of its service life by your suppliers or an association

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# Paper

- Use recycled paper
  - use of recycled waste paper helps to protect our natural forests
  - environmental impact is lower than that caused by the manufacture of paper made from virgin fibres
- Instead of printing each material for each colleague it is better to circulate it, or have it available in a central news board
- Copy in duplex format
- Copy 2 A/4 sheets on one side
- Collect the material to be copied - the energy consumption of the copiers can be 3 times bigger if it has to warm up the toner each time before copying
- Use the print preview rather than making a mistake in printing
- Don‘t use an extra cover sheet when faxing or just send an e-mail instead of faxing

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# Paper

Think before you print

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# Further information

- EU: GPP Toolkit
  http://ec.europa.eu/environment/gpp/first_set_en.htm
- Ecolabel
  http://ec.europa.eu/environment/ecolabel/index_en.htm
- Blue Angel
  www.blauer-engel.de/
- Buy Smart
  www.buy-smart.info
- Energy Star
  www.eu-energystar.org
- TCO
  www.tcodevelopment.com
- EPEAT
  www.epeat.net/Default.aspx
- PrimeEnergyIT – Efficient Data Centres
  www.efficientdatacenter.org

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| 7 | ENEA | Italy |
| 8 | Energiaklub | Hungary |
| 9 | ESS | Sweden |
| 10 | ESV | Austria |
| 11 | Icemenerg | Romania |
| 12 | KREA | Lithuania |
| 13 | RAEE | France |
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