

Training Module for IT/ Office Equipment

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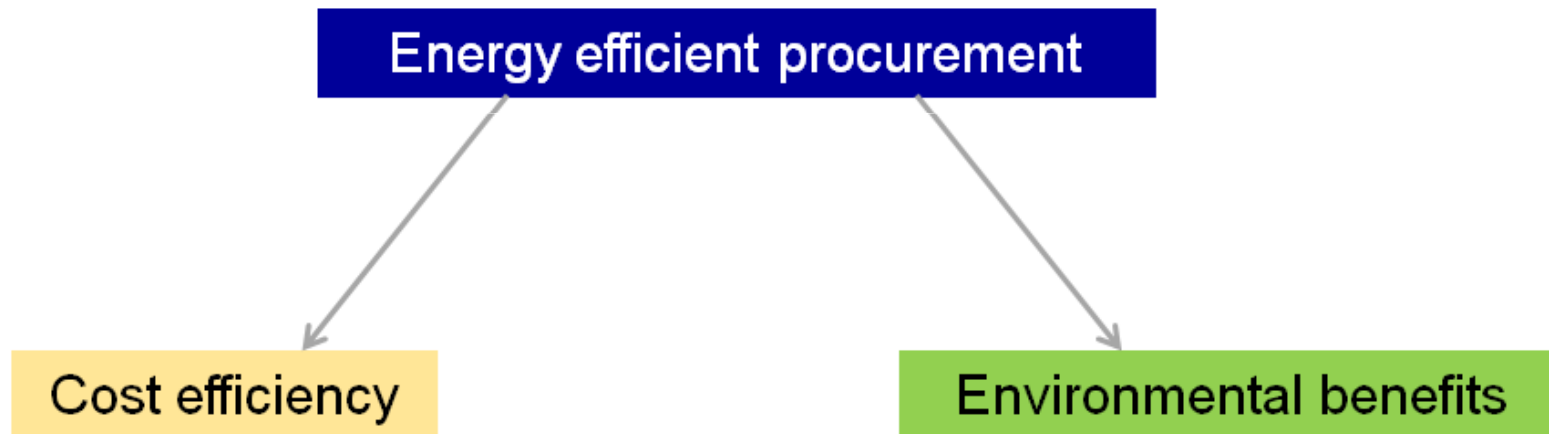
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The relevance of energy efficiency in case of office equipment



- with the procurement of each IT equipment the maintenance costs are settled for the next 5-6 years
- IT equipment currently consume 55TWh in Germany, which means the 10% of the overall energy consumption in the country
- The IT relevant energy consumption will rise with more than 20% in Germany until 2020
- Office equipment consume altogether about 6,5 billion kWh per Year in their idle state . That equals 1,4% of Germany's energy consumption and 4,6 million tons of CO₂
- There is a saving potential up to 50% percent in the area of IT equipment

Advantages



Operation modes



- On mode/ Active power/Operating mode
- No load mode: Sleeping mode, Standby
- Off mode/ Hard off mode

Energy consumption of the most important office equipment



Computers 8/1

Computer	On mode	Sleep Mode	Standby	Total
Power consumption [W]	78.2	2.2	2.7	--
Utilisation period [h/a]	2279	3196	3285	--
Energy consumption [kWh/a]	178	7	9	194

Table 1: Average values for computers, characterized by 3 GHz processor (or equivalent), built-in graphics card, 512 MB RAM and 80 GB HDD, 2007 [IVF]

Energy consumption of the most important office equipment



Laptops 8/2

Laptop	On mode	Sleep Mode	Standby	Total
Power consumptions [W]	32	3	1.5	--
Utilisation period [h/a]	2613	2995	3153	--
Energy consumption [kWh/a]	84	9	5	98

Table 2: Average values for laptops, characterized by mobile 1.7 GHz processor (or equivalent), good 3-dimensional graphic performance, 15"-screen, 512 MB RAM and 60 GB HDD, 2007 [IVF]

Energy consumption of the most important office equipment



Monitors 8/3

LCD-Monitors, 17" (low-priced)	On mode	Sleep Mode	Standby	Total
Power consumptions [W]	25	1,2	1,2	--
Utilisation period [h/a]	2586	3789	2375	--
Energy consumption [kWh/a]	52,2	4,3	3,6	60,4
CRT-Monitors, 17"	On mode	Sleep Mode	Standby	Total
Power consumptions [W]	73	3	3	--
Utilisation period [h/a]	2586	3798	2375	--
Energy consumption [kWh/a]	153,3	10,9	9	173,2

Table 3: Average values for average monitors 2009 [Energy Star]

Energy consumption of the most important office equipment



Printers 8/4

Inkjet Printer, 11/4 ipm	Operating	Sleep Mode	Standby	Total
Power consumptions [W]	15	1	-	--
Utilisation period [pages/a]	3 000 b/w 1 000 colour			--
Energy consumption [kWh/a]	0,1	8,7		8,8
Laser Printer, 32 ipm, b/w	Operating	Sleep Mode	Standby	Total
Power consumptions [W]	650	40	-	--
Utilisation period [pages/a]	100 000 b/w			--
Energy consumption [kWh/a]	33.8	350.4	-	384.2

Table 4: Average values for exemplarily printers 2009 [ENERGY STAR]

Energy consumption of the most important office equipment



Multifunction devices 8/5

MFD, duplex, 6 -12 ipm	Operating	Sleep Mode	Standby	Total
Power consumptions [W]	500	15	-	--
Utilisation period [pages/a]	5 000 b/w 1 000 colour	-	-	--
Energy consumption [kWh/a]	4,8	131.4	0	136,2

Table 5: Average values for exemplarily MFD 2009 [ENERGY STAR]

Energy consumption of the most important office equipment



Fax machines, MFD with main function fax 8/6

MFD + Fax, 6 -12 ipm(color laser MFD 6-12 ppm)	Operating	Sleep Mode	Standby	Total
Power consumptions [W]	600	15	-	--
Utilisation period [pages/a]	5 000 b/w 1 000 colour	-	-	--
Energy consumption [kWh/a]	4,8	131.4		131.9

Table 6: Average values for exemplarily fax machines 2009 [ENERGY STAR]

Energy consumption of the most important office equipment

Copy machines, MFD with main function copy, digital duplicator 8/7



MFD + Copier, duplex	Operating	Sleep Mode	Standby	Total
Power consumptions [W]	1 000	10	-	--
Utilisation period [pages/a]	80 000 b/w 20 000 colour	-	-	--
Energy consumption [kWh/a]	53.3	87.6	0	140.9

Table 7: Average values for exemplarily copiers 2009 [ENERGY STAR]

Energy consumption of the most important office equipment

Scanners, MFD with main function scanner





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- usually with no „off“ switches

Eco-labels



				
Product-group	Office equipment (in the EU)	Almost everything	Household appliances, office equipment	Office equipment, furniture, phones
Power consumption requirements				
On mode	Yes	No	Yes	No
Sleep mode	Yes	Yes	Yes	Yes
Standby	Yes	Yes	Yes	Partly
Safety at work	No	Yes	Yes	Yes
Noise emission	No	Yes	Yes	Yes
Obligatory/voluntary	Voluntary	Voluntary	Voluntary	Voluntary
Registration costs	No	Yes	Yes	Yes
Distribution	Worldwide	Germany, open for foreign producers	Europe-wide	Europe and North America

General procurement tips



- What do we need? Buy according to the needs.
- Active energy management systems, energy efficient devices
- Devices with no consumption in off-mode
- A MFD usually consumes 50% less than the separate devices together.
- Major savings can be reached with using the duplex function
- .
- LCDs that are common in trade consume 50% less than CRT monitors
- An average notebook consumes 50-80% (depending on the performance) less than a desktop PC with monitor

Tipps for the usage



- Activate the energy saving settings of the devices- name the responsible colleague for it
- Centralize the office equipment
- A little break is good for the PC and the monitors
- Disconnect the power supplies and chargers of laptops
- The consumption of an off-mode PC can be around 15 Watt
 - Switchable multiple sockets
 - Timer switch

Tips for paper usage



- Instead of printing each material for each colleague it is better to circulate it, or have it available in a central news board
- copying in duplex format
- use the backside of an already used document for test printing
- 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

Procurement Policy



- The equipment has to match the Energy Star requirements. The products holding this label are in the 25% of most efficient equipment.
 - Performance sheet A

- Furthermore try to comply with the other environmental criteria
 - Performance sheet B

Thank you for your attention!

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