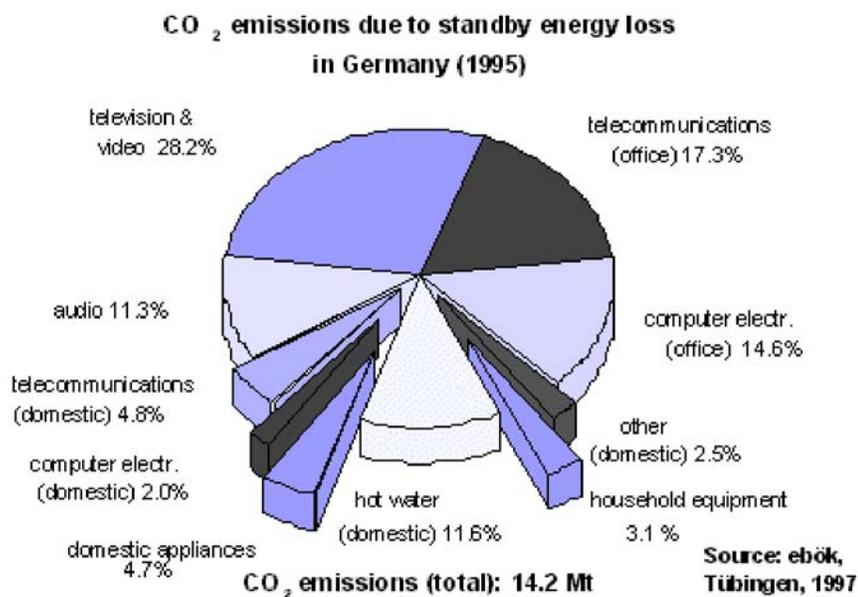


Waste While Standing By

Federal Environmental Agency presents first comprehensive data on energy loss from office and household appliances in stand-by mode

At least 11% of the electricity consumed in German households and offices is used by temporarily unused equipment running in stand-by mode. This was the result of a study commissioned by the Federal Environmental Agency and the Federal Ministry for the Environment, in which the electricity consumption of electrical appliances on stand-by was determined for the first time in both areas. The stand-by consumption calculated here is far in excess of the stand-by energy losses for electrical and electronic equipment in Germany from previous studies, and amounts to at least 20.5 billion kWh (20.5 Terawatt hours, TWh) per year — more than two 1000 MW power stations produce in a year and far more than a major city such as Berlin requires annually (ca. 14 TWh). This unnecessary electricity consumption was responsible for about 1.5% of Germany's total CO₂ emissions in 1995.



While modern office and entertainment individual appliances electronics technology is reducing the stand-by power consumption of individual appliances, at the same time, more and more appliances which cannot be completely switched off are being used — they wait, for example, in so-called stand-by mode. The study, by the Engineering Office for Energy Consulting, Domestic Technology and Ecological Concepts (Ingenieurbüro für Energieberatung, Haustechnik und ökologische Konzepte, ebök) in Tübingen, on the current state of affairs, projections and potential for CO₂ reduction and climate protection by reducing stand-by energy loss ("Klimaschutz durch Minderung von Leerlaufverlusten bei Elektrogeräten — Sachstand/Projektionen/-Minderungspotentiale"), calculates a total stand-by energy consumption of 14 TWh for private households alone. Most is wasted by television sets, satellite receivers and video recorders, whose remote control receivers remain active, as well as antenna signal amplifiers, making a total contribution of 41.4% of stand-by losses in private households. Continually producing hot water accounts for 17%, while stereos, radios and similar take a share of 16.6%. What is more, even normally switched off appliances — i.e. those without a stand-by mode — can still draw current if, for example, the supply to the transformer is not completely broken by the switch. Often ignored, clocks in household appliances and chargers for cordless telephones, telephone equipment, fax machines and answering machines, which are always on, as well as chargers for electric toothbrushes and similar all keep the meter ticking over.

Stand-by power consumption by electrical equipment in the office totals 6.5 TWh, of which telephone appliances, with almost 38%, consume the largest share. Just over 19% of unnecessary electricity consumption each is caused by photocopiers and computers, followed by 12.5% for fax machines and modems. The rest is shared between printers, typewriters, mobile phones and similar. The total stand-by electricity consumption for office telecommunications equipment is 3.5 TWh, while information technology accounts for around 3 TWh. Total unnecessary consumption is even greater than this: lights left burning needlessly, hot water in offices or sector-specific equipment such as bank-note verification equipment were not included in this study.

Every Watt of unnecessary continuous power results in almost nine kWh per year, and costs around DM 2,50. But most equipment needs more than a single Watt. Televisions use 100 kWh per year (around DM 28), video recorders 150 kWh (DM 42) and the average photocopier needs as much as 500 kWh (DM 140). Thus a "well-equipped" household, i.e. with PC, answering machine and so forth, wastes about DM 250 per year. And many costs can be avoided without compromising on comfort. Exclusive use of especially energy-efficient new equipment on the market today would reduce stand-by power use and CO₂ emissions by 60%. Nonetheless, one scenario for the time up to 2005 in the ebök study assumes that savings of only 40% will be achieved, if in future only the best appliances are bought, as more equipment will be used. This would still save German households around two million Deutschemarks in electricity costs per year.

The study points to the technological possibilities within individual appliance groups, and describes the action being taken in Switzerland, the USA and Sweden to save electricity.

But it is not only energy-conscious shopping which can help save money and protect the climate — day-to-day actions can also help, without incurring additional costs. For example, if a computer or a television is no longer in use, it is worth switching it off completely, and if a red light is even then still indicating that electricity is being used, cutting off the power supply completely can help. Adaptors which plug directly into the socket are also appliances which cannot be completely switched off. In this case pulling the plug or plugging the adaptor into a socket or socket board which can be switched off is useful. And those who do not wish to reprogramme their video recorders continually should still consider whether the machine needs to display the time of day while its owners are on holiday abroad.

As Berlin hosts the International Radio Exhibition, the Federal Environmental agency appeals to manufacturers and retailers to use improved product information to offer the consumer the possibility of deciding for especially energy-efficient appliances. Suppliers should also make use of the technology already available to reduce significantly the current used when in stand-by mode. But they should also test the need for such stand-by switches on their equipment.

Berlin, 3/9/97

The study on the current state of affairs, projections and potential for CO₂ reduction and climate protection by reducing stand-by energy loss (Klimaschutz durch Minderung von Leerlaufverlusten bei Elektrogeräten — Sachstand/Projektionen/CO₂-Minderungspotentiale") is published as TEXT No. 45/97 (118 pages) [can be obtained](#) for DM 15,- from Werbung und Vertrieb, Ahornstr. 1-2, 10787 Berlin (monies should be transferred in advance to account number 43 2765-104 at Postbank Berlin, clearing code 100 100 10).

Energy — and thereby money — can also be saved by using especially efficient domestic appliances. A current overview of available products can be obtained by sending DM 5,- to: Niedrig-Energie-Institut, Rosental 21, 32756 Detmold.