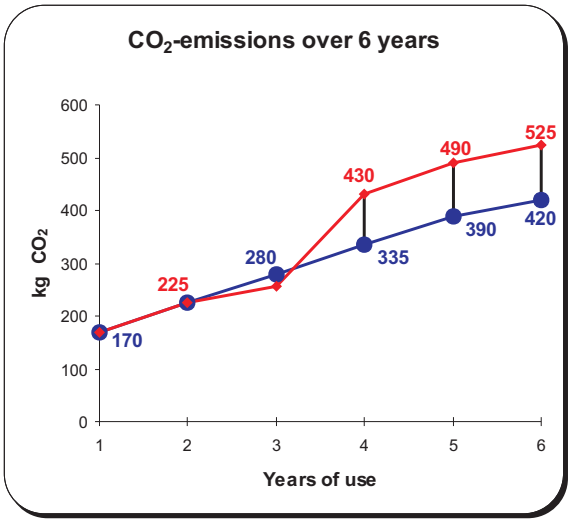
ReUse Computer

www.ReUse-Computer.org

A real contribution to environmental protection !

Extended use of IT hardware conserves 550 liters of clean water and helps to avoid 105 kg CO_2 emissions



- 115 kg Co_2 production, transport, sale
- 55 kg Co_2 annually for average use (60 kg for a new PC)
- -25 kg CO_2 'credit' for materials regained from recycling

Carbon dioxide (CO_2) is the main cause of the global greenhouse effect. CO_2 is released whenever fossil fuels are burned to generate electricity whether to power your computer or the complicated production processes for the microelectronics it contains. ReUse offers a way to significantly reduce the emissions of CO_2.

Suppose you need to buy a computer and find yourself facing a choice between a new product and a refurbished 3-year-old ReUse computer ? As the graph shows, your decision will impact on the levels of CO_2 emissions: The red line is the CO_2-balance for two PCs used for 3 years each, the blue line shows the result for one PC used over 6 years.

A clear advantage for the ReUse computer ! A cut of **105 kg** in CO_2 emissions! That corresponds to the CO_2-emissions for a car trip from Berlin to Munich.

For surfing you need water

550 liter water is used in the production of a microchip for a PC. With some 160 million computers being sold worldwide in 2004, this adds up to about 90 million cubic meters of water per annum (a cube with edges almost half a kilometers long !) and that is only for the production of the processors.

Taiwan is a major player worldwide in chip production, and at the same time rice is its staple food, which requires a lot of water to grow. In view of rain shortages, they faced the problem of where to put their priority when it came to using the water. And the decision was made in favor of the chip factories ! These conflicts of use occur at regular intervals every year.

And this is despite the fact that the semiconductor factories in Taiwan are already the most efficient in terms of water consumption! 95 % of the water there is recycled and used in closed cycle systems.

For computing you need electricity

The production of a PC in 1999 required about 535 kWh of energy. The transport of the individual PC components to Europe for final assembly and sale, mostly from the Far East, accounts for another 10 % of the energy consumption of the final product. That corresponds to the average fuel consumption for a car trip Berlin to Hamburg and back.

The energy consumption for the production of PCs worldwide is comparable with that of a city like Munich, including all its traffic and industrial companies.

Modern equipment such as computers, printers, televisions, and audio equipment fallen consume between 3 and 15 Watt in stand-by mode. With some 35 million households in Germany each using approximately 30 Watt stand-by , that means that 1 GWatt is required. The only way to reduce that is by the use of power sockets that are fitted with a switch.

Less is more

The first question that you should ask is: "What do I need to do with a computer ?" Do you really need a 'number cruncher' ? Are you really going to be running time-consuming evaluations for tasks like meteorological simulations ?

In fact, most of the computers in use at the TU Berlin are needed more or less as an 'electronic typewriter' and 'surf-computer' that is for typical office applications.

But does an office computer have to run with the latest 3 Ghz chip from Intel P4, or a 3.2 GHz AMD Athlon 3200+ ? Here are facts:

	Idling	Full load
Intel P4	114 Watt	192 Watt
AMD Athlon	136 Watt	173 Watt
Intel $P3_{1GHz}$	**35 Watt**	**60 Watt**

Conclusion: You can cut your power consumption by two-thirds if you ignore the speed race and use an older computer for a longer period.

• TU Berlin, Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration, Dipl. Ing. Karsten Schischke, eMail: karsten.schischke@tu-berlin.de
• TU Berlin, Zentraleinrichtung Kooperation - kubus, Dipl. Volkswirt Frank Becker, eMail: becker.reuse@zek.tu-berlin.de
ReUse-Computer e.V. • Tel.: 0700 - 873 73 873 (12 ct / Min. bundesweit) • eMail: Info@ReUse-Computer.org