

Tower of Power

More Details

Taken for granted: electricity

We all operate a wide variety of devices every day – without much effort, usually at the touch of a button. The devices then do the work for us. For example, the elevator in a building lifts us up, the kitchen appliance chops up the vegetables and kneads the dough, the refrigerator keeps the food fresh, and the television and computer supply us with pictures and stories from all over the world. Compared to our ancestors, we are largely freed from physical labour. It is electrical devices and motors that do the work for us. We are freed from work and can turn our attention to other things. The technical progress consists essentially in the provision of machines that do low-level, unpleasant work for us.

How much energy do we "consume"?

We have become so accustomed to our technical slaves that we hardly know the effort behind the devices that surround us. Our "Tower of power" shows how tedious a world without electricity would be, in which we would have to do everything with physical strength. It shows how insignificant our power is and how massively we depend on electricity.

What is the power of a human being? In physics, energy is the product of power and time. Power is measured in watts. An adult can manage 50 watts when cycling, and a top athlete can manage 500 watts for shorter periods of time, but that is all. You can see how little that is when you use your muscles to turn on the television. Because a tube

TV needs around 100 watts, a plasma screen more than twice that, depending on the size of the screen! A person in Europe whose muscles only have a power output of 50 watts currently uses an average of 6,000 watts in our fully mechanised world. In the USA it is even more than 10,000 watts!

And where does all the energy come from?

Well, the energy comes either from the petrol we pour into the tank or, in the case of electrical energy, from the large power stations of the so-called energy producers. And how does it get into the power stations? Usually as coal or natural gas. These are so-called fossil fuels, fossil because they are nothing more than the remains of swamp forests that were once green many millions of years ago and which captured the sunlight and converted it into organic compounds. We can burn these today and get the old solar energy back. That is nice, but burning them produces CO₂, which is partly responsible for climate change. What is more, the reserves of fossil fuels are not unlimited either.

The 2000-watt society – a dream?

We must therefore try to switch from fossil fuels to those that are available in unlimited supply, such as wind or solar energy. In addition, we must use energy much more efficiently and economically. In Switzerland, the idea of the 2000-watt society was developed, i.e. a society in which everyone consumes only 2000 watts instead of the usual 6,000. A concrete goal, everyone can work towards.