

# Every energy-saving light bulb is a small step towards climate protection

The efficient way to handle energy at home has to be learned

In Germany a quarter of all electricity is consumed in private homes. For lighting, cooking or washing, home electronics and computers. The German Energy Agency (dena) popularizes possibilities, which help save electricity – not just in Germany.

Saving electricity has become really popular in Germany. 96 percent of those asked in a survey conducted in July 2008 said the efficient use of electricity is important or very important for them. The Initiative EnergieEffizienz of the German Energy Agency (dena) has achieved a great deal and is continuing to do so – beyond the country's own borders. It serves as a precursor for other countries, which now, just like the

European Union, are committing themselves strongly to implementing the Kyoto climate protection goals.

Dena's campaign informs and motivates people to use electricity efficiently in their own home. The aim is to sensitize individuals to the subject, inform them as to the background and options for action and motivate them to act with regard to energy efficiency. Because if people do not save energy within their own four walls as well, then any attempt at climate protection is just patchwork. The informational and advisory offerings encompass high quality information material for private consumers, ongoing media communication as well as public events such as exhibitions or action weeks in the retail trade.

Improving energy efficiency plays a decisive role in ensuring that rising prices do not mean automatically higher costs for the

consumer. It is about achieving the same usage with the application of less energy. Around the world there is great potential for making savings, which can be achieved through energy-efficient technology and solutions without a drop in quality. Thus, in many private households in Germany it is possible to reduce electricity consumption by 25 percent through economic measures. And this even though home entertainment equipment and computers are becoming increasingly more powerful. Televisions continue to become thinner and bigger, the stereo is developing into a sound system, DVD-systems are turning into home cinemas.

Modern home entertainment electronics offer continually more performance – at the same time electricity consumption is also growing. That does not have to be the case because the energy consumption of devices of similar equipment level can be very

different. Requiring 50 percent less electricity for the same performance is completely possible. Whether the new device is a bargain, not only at the time of purchase but also in the long-term, is decided in the end by the electricity bill. Saving starts, therefore, with the first energy-saving light bulb but goes far beyond this, and this is where the consumer needs assistance.

To make full and complete use of the available savings potential in private households the German Energy Agency (dena) offers extensive information on energy-saving operation and purchasing-decision assistance for energy-efficient devices. This can be found on the dena websites [www.stromeffizienz.de/](http://www.stromeffizienz.de/) and (especially for young electricity users) [www.powerscout-online.de](http://www.powerscout-online.de).



**Energy-saving light bulbs:** These use up to 80 percent less electricity for the same brightness and last around ten times as long as conventional light bulbs. This more than makes up for the higher purchase price. A 4-person household which uses just energy-saving light bulbs can save some €90 (\$118) a year on electricity (at an electricity price of 20 cents/KWh). Important to note when buying: the right energy efficiency class (EU label on the packaging, very low consumption = A, bulbs with high energy consumption = G).

## Who pays, uses less

Interview with the Chief Executive Officer of Techem AG, Horst Enzelmüller

Techem AG is an internationally active German energy service provider for the real estate industry and private property owners.

**How can energy efficiency in residential property be improved and the economical use of drinking water best achieved?**

Enzelmüller: Many people think here of measures such as building insulation, the installation of new windows or replacing the heating or air conditioning systems. These are useful but, however, mostly expensive and complicated measures. Simpler and cheaper, the logging and calculation of individual energy and water consumption leads by itself to a more economical treatment of these resources. There are often large potential savings to be had in the operation of heating or air conditioning systems. More important than the latest technology is often the correct use of the system.

**In the new, booming economies energy and water consumption increase very rapidly with the growing prosperity – what do measures such as the user-related logging and calculation of consumption bring these countries?**

Enzelmüller: Our decades of experience from more than 20 countries prove: whoever pays for what he uses treats valuable resources with much more awareness and economy. In general the consumption of heating or cooling energy and drinking water sinks by up to 20 percent if payment is calculated according to individual use instead of at a flat-rate. Here, especially in the booming economies, lies an immeasurable potential.

**What do the innovative technical solutions, which go beyond pure logging and user-related calculation, look like?**

Enzelmüller: These are solutions by which the logging devices can do more than just recording consumer use. A very successful example of this is the Techem energy saving system, adaptterm, which alongside the energy consumed also records the actual heat requirement in

a building. With the help of this data, adaptterm lowers the outgoing temperature from the heating plant to the actual requirement – without the residents having to alter their heating behavior or go without a warm apartment. The same thing is, of course, conceivable for optimum cooling in hot countries. Thus technical innovations help to save energy and CO<sub>2</sub> quickly and cheaply.

**Which areas do your services cover in detail?**

Enzelmüller: Our subject is energy and resource management – we ensure with innovative solutions that businesses and private tenants in multiple occupancy buildings save energy or water quickly and effectively with low levels of investment – and so reduce their costs and make a significant contribution to climate protection. Of ever greater significance will be contracting, the outsourcing of the management of heating or air conditioning systems. Due to higher energy prices many property owners prefer to put the operation of their buildings in the hands of a professional service provider.

**What do your approaches to efficient energy management look like?**

Enzelmüller: In the course of the worldwide CO<sub>2</sub> and climate debate an important sector is receiving far too little attention: private households. In Germany around one third of national energy consumption is taken up by heating private households. During the energy crisis in the 1970s this was recognized and laws passed that rewarded energy-saving behavior. This is the only way consumer behavior can be guided for the long-term. Now politicians in other countries are also being called on to set the points in the right direction by legislating – that's what we're fighting for here at Techem and in so doing Germany can be an archetype for the world.

### The most important savings tips for home entertainment electronics, computers and lighting



**Stand-by:** Whoever orients himself on a device's energy efficiency already when buying it, takes note of low electricity consumption in its operation and stand-by mode, is saving cash in the hand. An efficient flat screen television needs just one watt or less in stand-by. That's why the Initiative EnergieEffizienz recommends asking the retailer about each device's power consumption and comparing models with each other.



**Off-switch:** Often, however, there is no proper off-switch available – especially on satellite- and digital-TV receivers. Some of these devices need 10 watts or more in stand-by mode. So inform yourself about the device's stand-by consumption when purchasing it – it pays off. Using a multiple socket outlet with an on-off switch lets you avoid easily the unnecessary consumption of electricity by devices without a proper off-switch. With compact systems, video- and DVD-recorders you should take note that settings such as time and date can be lost when the power is cut – a look in the handbook will give you more information.



**PC, Monitor, Printer:** They are almost always live even when they are not being used. To lower the energy consumption during short breaks between work, nonetheless, use your computer's energy-saving function. Modern computers have one but it is sometimes not active on delivery. You find this function in the system administration under menu options such as "Energy options" or "Energy saving." You can get detailed information on how you can configure your computer's power management on the Internet at [www.stromeffizienz.de](http://www.stromeffizienz.de).



**Mobile devices:** Communication devices, such as mobile telephones or laptops are recharged mostly via external mains adaptors. If the adaptor remains plugged in when the device is not being recharged then it is causing stand-by losses. You can avoid that by just pulling the plug when you've finished reloading!

## Saving electricity in industry and business

Intelligent solutions for manufacturing with less CO<sub>2</sub> and lower costs

Know-how is an important export factor. The German Energy Agency (dena) helps companies to further expand their international competitive position in the field of efficient energy use.

The German-wide Initiative EnergieEffizienz from dena serves to accelerate the exploitation of available energy- and cost-saving potential. Central target groups are decision makers in industrial companies as well as manufacturing industry.

Dena makes use of informational measures to draw attention to the significance raising energy efficiency has on competitiveness, securing the company and innovation. It creates purpose-oriented information as well as offers for increasing the efficiency of electricity consumption and works together with multipliers from industry and trade associations, as well as energy and business consultants. As part of the campaign dena informs commercial and technical decision makers in

industry and business within the Initiative EnergieEffizienz framework about possible cost and energy savings through increasing energy efficiency by means of interbranch cross-sectional technology.

Currently the focus of the dena experts: the fields of materials handling, air and climate technology as well as pumping and compressed air systems. Decision makers, especially in small and medium-sized companies, and also planners, are provided with extensive information material and aids.

Various interactive tools, for example, help in identifying economically advantageous energy efficiency potential and give tips as to the appropriate measures for exploiting it. Detailed information sheets show where companies can take action in the planning and operation of cross-sectional technology in order to increase energy efficiency and thus achieve considerable cost savings.

Dena can already present numerous successful examples: a medium-sized manufacturer of furniture used an annual compressed air usage of around two

million standard cubic meters optimized its entire compressed air system according to efficiency criteria. With a system-oriented approach uppermost, first intake amounts, pressures and compressed air quality were adjusted to the actual requirements of the procedures. Then the distribution network was optimized. Leaks and bottlenecks in the pipes were removed. Finally, dimensioning and regulating were adjusted to the new (lowered) requirement. The result: almost 40 percent saved.

An additional efficiency gain for the company: a part of the heat generated in the compressed air station has been used ever since for heating purposes. In all, through these measures almost 40 percent of the electricity required for the compressed air was saved. The annual energy costs sank as a result by around €10,000 (\$13,300) – increased usage for lower costs.

The efficient use of electricity offers companies numerous advantages – also in materials handling, another emphasis of the dena project, because reducing energy

consumption brings not only cost savings: the optimization of materials handling systems leads, in addition, to a clear gain in know-how, which raises a company's competitiveness.

And it is exactly in the electric motors used so extensively in materials handling that there is a clear potential to make savings. Around 65 percent of the electricity used in industry and business is accounted for by electrical motors and the machines that go with them.

The use of modern air technology, too, saves electricity and CO<sub>2</sub>. One example: by using energy-efficient ventilators, energy consumption and costs can be sunk by an average 25 to 30 percent. Alongside a significant lowering of electricity costs, the use of modern technologies has even further positive effects. Among these are lower service requirements and reduced servicing costs. This is an example of how increasing energy efficiency is not in contradiction to company productivity. Quite the opposite: you are helping your company to strengthen its competitive position ([www.industrieenergieeffizienz.de](http://www.industrieenergieeffizienz.de)).



Horst Enzelmüller, Chief Executive Officer (CEO) of Techem AG, explains how energy efficiency begins with even the smallest changes of behavior.