

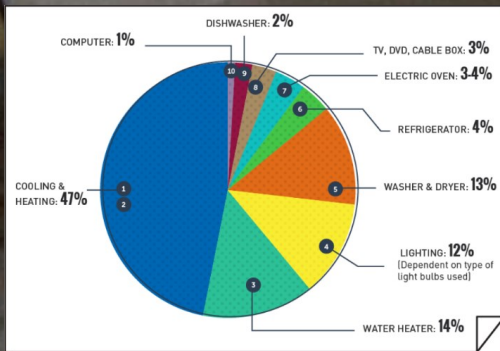


Co-funded by the Erasmus+ Programme of the European Union

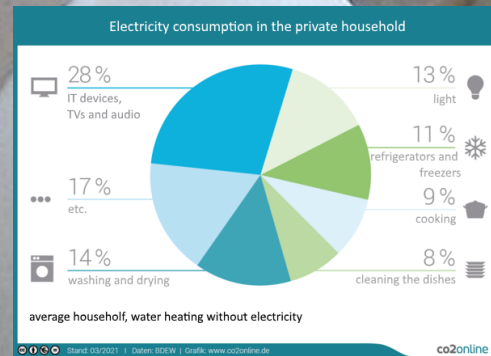
Energy consumption at home

What devices are there that consume a lot of energy?

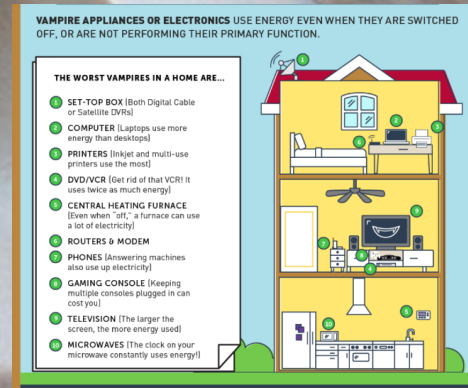
In an average European household, these devices use the most electricity:



Electricity consumption in German households:



phones, gaming consoles, televisions, and microwaves



Devices that run 24/7 are called "vampire appliances"

One of the easiest ways to reduce wasted energy and money is to shut off "vampire electronics", these are devices that consume power even if they are turned off. These include digital cables or satellite DVRs, laptop computers, printers, DVD players, central heating furnaces, routers and modems,

Computers and technology:

- Wifi-routers
- TV (off – 0.3 W (small) to 3.3 W (big)),
- Desktop computers (21.13W),
- laptop computer (15.77W),
- laser fax/printer (6.42W),
- DVD or Blu-Ray players (10.58 W)
- digital cable/DVR set-top box (43.46 W)
- Video game console (23.34 W) (PS4 off – 1 W, stand-by – 5 W)

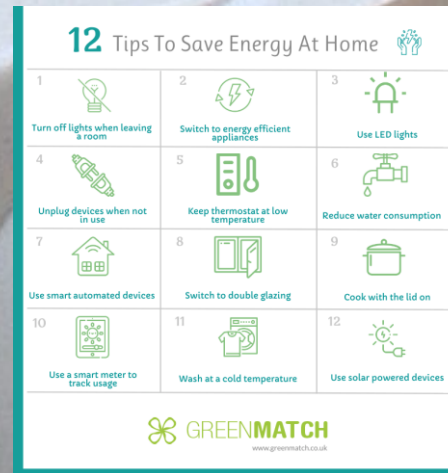
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Kitchen and Cleaning:

- microwaves (3.08 W, off – 0.8 W),
- refrigerators and freezers
- coffe maker (off – 0.35 W),
- dishwashers
- vacuum cleaner robot (full charged – 1.25 W)

What can be done to reduce energy consumption?

We can reduce energy consumption by paying attention to things that don't seem important



- Turn lights off when leaving a room
- Switch to energy efficient appliances
- Reduce water consumption
- Use natural light
- Keep the thermostat at a lower temperature
- Use devices such as smartphones or tablets longer than a year or so
- Use smart meter (keep a track of your consumption in real-time)
- Isolate the house better
- Use natural material when building

- Collect rainwater (e.g. for washing)
- Consider location of the house
 - natural barrier to the north, big windows toward south, east and west
- Use environmentally-friendly architecture should be appropriate to the climate

How much CO2 could be saved by taking the right measures?

About 21% of the CO₂-consumption per person is used for heating and electricity (in Germany). The smaller the house, the smaller the CO₂ consumption is.

- Switching to green electricity provider (2 people in a 70 m² apartment can save about 1 ton of CO₂)
- Reducing the room-temperature by 1 degree °C saves about 160 kilograms of CO₂ a year (using thermostats)
- Intermittent ventilation instead of tilting ventilation leads to another 340 kilos less greenhouse gases in our example apartment, every year.

- pay attention to the efficiency class of the devices (a A+++ refrigerator save about 130 kilograms a year)
- Exchange old lightbulbs by leds (and save up to 135 kilos in a 1 family house)

Would be possible to automise certain processes such as switching off the printers at a certain time?

Automating this process is not that difficult

- You can use socket timers to switch devices off at a certain time.
- Likewise, sockets with apps can switch off devices remotely-from your phone

What measures could be taken to make your house carbon neutral?

- Use renewable energy
- Have solar panels on your own roof so that you can even transfer excess power to the power network.

- Tesla's powerwalls would help at nights when solar energy can't be harvested.
- Offset your CO2 emissions:
 - paying someone else to reduce CO2 emissions for you, which allows you to reduce your global warming pollution to zero
 - drive less and then make up for the emissions
 - helping finance things such as wind farms, tree-planting projects or solar panels

Sources: co2online.com, homestars.com, greenmatch.uk, energystar.gov, quarks.de, bioadvanced.com,

