



EmpowerMed

Hints and tips for improving well-being in your home

Training Module





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Overview of Module ‘Hints and tips for improving well-being in your home’

Learning objectives

- Learning simple tricks to improving well-being at home
- Learning simple energy and water saving measures
- Learning of smaller or bigger investments for improving well-being at home
- Knowing where to get further information and help when needed

Contents

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- Energy saving myths
- Further useful steps, services and contacts

1 Introduction to improving well-being and taking your energy bills in control

Dear reader,

Electricity, water and heating have become more and more expensive in recent years. Today, the costs for heating, water and electricity represent a huge part of a household budget, sometimes causing a real challenge for the households to cover these costs. Because women and old people are more likely to be affected by energy poverty, emerging negative consequences especially impact those social groups. Estimates show that in Europe over 50 million people face delays in paying their energy bills. Apart from that, over 50 million people cannot keep their homes warm during winter, while over 100 million people in Europe cannot keep their homes comfortable during the summers.

This shows that if you have difficulties in paying your energy bills or you feel too cold or too hot in your home, you are far from being alone in this situation. Many people share it. Their experience, as well as knowledge of experts in different fields, underpin this collection of hints and tips to improve well-being in your home and your health.

Many people also share experiences of being disconnected from energy or water supply,



being harassed by companies to pay back an accumulated debt, or being cheated or tricked by energy companies. Energy companies often have strong power, but often they exercise their power in a way that violates basic rights. In such situations changes in your behaviour will not be enough, or you might already be doing all that you can in terms of adequate consumption and habits, but you also need to raise your voice and exercise your rights. This collection of hints and tips can be a tool to identify if you are in that situation and offer a few ideas who or what can help you (see chapter 10).

Trying to make it more comfortable for you in your home does not necessarily mean revolutionizing everything. A few good changes are enough to lower the bills, easily and inexpensively! The following tips will provide you with resources and tools to be in control of your bills, and at the same time will save you money and help improve your well-being and health. However, if you wish to take bigger steps and get in contact with people who can do this with you, at the end of this collection you can find some suggestions and contacts, for example, to change your energy supplier, receive subsidies for improving your home or work out your debt to energy supplier.

Perhaps needless to say it, but we shall say it nevertheless: what this collection is providing you with is an advice, not a fix “what to do” recipe. It is entirely up to you how to proceed – if you like the advice, take it, if not, feel free not to take it. The final decision is always yours.

Many of us developed habits, that can be rather expensive. For example, turning the TV off only with the remote control means that you will still be paying over 20 EUR per year for electricity that the TV consumes. Changing this habit is not going to significantly decrease your well-being, but can help you keep your energy bill under control.

The first step to controlling your bills is to know them. Get to know your bills; if necessary, ask your supplier to explain you your bills. Today the bills related to electricity, gas, heating or water are very complex and the majority of the population cannot understand what costs they have to pay. This puts suppliers in a more favourable position, as sometimes they can gain advantages by people not understanding what they are paying for. Hence find help, if you need help to understand your bill.

The next step is to keep track of your consumption. So get involved in your energy planning and check your consumption and your bills regularly: it will ease the planning of your family budget. Witness how changes in your behaviour may affect energy bills. Do pay attention to the fact that sometimes for the change to be visible on your bill it might take time, because in some cases bills are issued based on previous consumption, not ongoing consumption. It makes sense to keep the bills for at least two years. This makes it easier to compare expenditures over time. If any anomalies occur, we can quickly check and act on this. In addition, it is advisable to prepare a table to monitor monthly costs for electricity, heating, water and other costs. In that case we can compare monthly costs and the dynamics of their change. Those simple steps enable you to take charge of your energy planning (no matter how much technical knowledge you have or have not).

If you want to get an idea of the limits of your electricity consumption, you can compare your consumption with the Table 1.

Members in the household	Normal	Too high
1	1.500 – 1.900 kWh/ y.	> 2.300 kWh/ y.
2	2.600 – 3.300 kWh/ y.	> 4.000 kWh/ y.
3	3.700 – 4.500 kWh/ y.	> 5.300 kWh/ y.
4	4.600 – 5.500 kWh/ y.	> 6.400 kWh/ y.
5	5.500 – 6.500 kWh/ y.	> 7.300 kWh/ y.

If analysing your consumption shows you that you are in the “too high” box, do not worry. Consumption depends on many factors related to your dwelling and the building, not only to your habits. The aim of this collection of hints and tips is to help you identify what factors are influencing your consumption and what you can do to feel good in your home.

Infobox: What is Watt? - Power and consumption

The power that a device consumes is expressed in watts (W) or kilowatts ($1000 \times W = kW$). If this power consumption is multiplied by the usage time in hours (h), the power consumption is given in watt hours (Wh) or kilowatt hours (kWh). Example: annual power consumption due to the standby mode of a private PC (power consumption of 7 Wh during standby) that is being used for 2 hours per day while being in standby mode for 22 hours per day:

$7 \text{ W} \times 22\text{h/day} \times 365 \text{ days/year} = 56210 \text{ Wh} \approx 56 \text{ kWh}$ (Yearly power consumption of PC in standby)

$56 \text{ kWh} \times 0,29\text{€/kWh}$ (local electricity price) = 16,30€/year (Energy cost saving)

2 Space heating and cooling tips

It is important to control the temperature of the space: if too cold and humid, buildings can develop mould, which can adversely affect your health. That is why it is important to keep your home warm in winter and cool in summer, while also taking care that you air it properly. However, women and men have different comfort temperatures because the male body by nature has a higher muscle mass, which protects from freezing. Hence, women require a higher temperature at home to feel comfortable than men. Here are some hints and tips on how to efficiently heat, cool and air your home while keeping your home cosy.

Heating tips

- The easiest way to save energy on heating is to keep the recommended indoor temperatures. In winter, 21 °C during the day and 15 - 18 °C at night should be enough to make you feel comfortable at home. If you turn the heating up, you also use up more energy. If you can lower the heating by 1°C, you can reduce energy consumption by 6-7%. But remember to set the temperature according to your individual needs and the needs of the household.
- Set up a thermometer in the room. Then you can always check how warm it is.
- If you want to warm the room up: place the thermostat on the radiator only as high as you need it, so that the room is pleasantly warm. If you set the thermostat higher at the beginning, it will not heat any faster, but in the end, it is warmer in the room. And the heating costs are higher.
- The radiator and thermostat on the heater should always be unobstructed. Do not hide them behind curtains or furniture. Furniture in front of a radiator will block or absorb the heat. An obstructed radiator does not heat the room properly and uses up much more energy.
- Be creative: Re-arrange your furniture if positioned in front of radiators or if your couch or bed is placed against a colder exterior wall. If you have a space heater, take extra care to keep everything at a distance of at least 1m!
- Turn down the heating 2-3°C when airing a room, when not at home and about an hour before going to bed. Temperature can be colder at night and when you are not at home. It is recommended not to switch off the heating during the hours when you're away from home, only to reduce it. When it is turned off, your home will cool down too quickly, which will lead to overheating to reach a favourable temperature. Reduce the temperature, but not below 15 degrees, otherwise the air in the room becomes too humid and the risk of mould increases.
- Close those blinds at night to keep out unwanted looks – and unwanted cold! Close your curtains at dusk to stop heat escaping through the windows and check for draughts around windows and doors.
- What you see is what you feel: decorate your home with warm colours like red or orange to create a sensation of warmth.
- Have your heating system checked once per year to ensure it lasts longer and works as efficiently as possible. Also: keep your radiators clean!
- Maintain your radiators properly.
- Reflective radiator panels behind the radiators could reduce your heating bill by up to 20%. When radiators are installed on a poorly insulated wall, most of the heat will dissipate through the wall and to the outside. To avoid heat losses, a thin reflective panel between the wall and the radiator can be installed (they are easily available at stores).
- Drying your clothes on the radiator makes your boiler work harder than it needs to and costs more. Maybe try air-drying or line-drying instead - this way you can save energy and money!

- Leaving doors open between areas of different temperatures allows warm air to escape. Keep heat where you need it. Take control of heated spaces by closing doors (or by opening them in case you want to let heat be distributed to other rooms). Leaving the door open in a single room you want to heat will make you waste energy and money.
- When using wood for combustion in various heating plants (furnace, heating boiler) for heating purposes it is necessary to follow steps for proper wood burning: use suitable high-efficiency combustion plant; use air-dry firewood with a suitable log size; properly burn and add firewood; properly regulate combustion of air; and regularly maintain the combustion plant.

Airing

- Remember to ventilate. Ventilation is needed to get fresh air in and let moisture and smells out. Sometimes the air in the room is very humid. For example, after a shower, or cooking. Then you should let fresh air directly into the room. Ventilating also helps to reduce the number of pathogen-containing droplets in the air.
- Open the windows daily. Please remember, the shorter, the better: 5 minutes is generally enough! To have fresh air in the room, open several windows at the same time. Repeat 2-3 times per day. Don't be afraid to let heat escape during this time: It takes less energy to heat fresh air than to heat stuffy, moist air. If the windows are left tilted open over a long time in winter, it can cost more than 100 Euro extra per year. If it is too warm in a room, turn down the radiator. Open the windows only when you need fresh air.
- Take care to avoid keeping the window open for more than 15 min. If the window is open for much longer, walls and floors will cool down and it costs more energy to re-heat the room.
- In winter air during the least cold hours and switch off the heating.
- When opening the windows, always set the thermostats on the radiators to 0 or *. Turn the heating on only when ventilation is finished.
- Make sure to always close your windows properly. If you detect a draught, there are some inexpensive yet highly effective measures you can take, for example draught excluding tape on (attic) doors and windows.

Cooling

- Close your windows. It may seem counterintuitive, but on hot summer days, opening the windows will often make your home warmer, not cooler. When night falls, if the air outside is cooler than inside, open windows wide, particularly those oriented toward prevailing winds so you can take advantage of cross ventilation. Be sure to close the windows — along with blinds and shades — before the sun hits your house in the morning.
- Put houseplants in front of sunny windows to absorb some of the sun's energy.

- Keep your blinds closed. As simple as this tip may seem, up to 30% of unwanted heat comes from your windows, and utilizing shades, curtains and the like can save you up to 7 percent on bills and lower indoor temperatures by up to 20 degrees. In other words, closing the blinds essentially prevents your home from becoming a miniature greenhouse, which is especially the case with south- and west-facing windows.
- Closing off unused rooms will prevent cool air from permeating these areas during the hottest part of the day. You'll want to capitalize on the cooler night hours, too, letting air flow naturally through your home.
- Hack your windows. To create a cooling pressure current, open the top section of windows on the downwind side of your house, and open the bottom section of windows on the upwind side. Also consider facing a box fan out one window to push hot air out, and try wetting a sheet then hanging it in front of a second open window like a curtain for a chill-infused breeze.
- Hang a wet sheet in front of the window: when the air passes through the damp cloth, the moisture cools it off.
- Strip your house of its rugs, throws and knick-knacks. Try filling it with plants instead. It's a visual trick that works to fool your mind; bare surfaces look cooler which in turn makes you feel cooler.
- Set your ceiling fans to rotate counter-clockwise. You may not realize that your ceiling fan needs to be adjusted seasonally. The base of your ceiling fan has a small switch that changes the direction of the air flow. During the summer months your ceiling fan should blow forward in a counter-clockwise direction, forcing air down and making you feel cooler. During the winter months your ceiling fan should blow in a clockwise direction, circulating the air through the room without blowing directly on you. This doesn't necessarily cool down a room, but it increases the evaporative cooling from your skin, making you feel cooler.
- Turn on your bathroom fans. Or the exhaust fan in your kitchen, for that matter. Both pull the hot air that rises after you cook or take a steamy shower out of your house or apartment.
- Swap your sheets. Not only does seasonally switching your bedding freshen up a room, but it's also a great way to keep cool. While textiles like flannel sheets and fleece blankets are fantastic for insulation, cotton is a smarter move in hot weather as it breathes easier and stays cooler.
- Use buckwheat pillow. Because buckwheat hulls have a naturally occurring air space between them, they won't hold on to your body heat like conventional pillows, even when packed together in a pillow case.
- Sleep low. Heat rises, so hit the downstairs couch or basement, or put your mattress on the floor if the air feels cooler down there.
- Rig up a hammock or set up a simple cot. Both types of beds are suspended on all sides, which increases airflow.
- When temperatures soar, trade in that extra-comfy mattress for a minimalist straw or



bamboo mat. These all-natural sleeping surfaces are less comfortable, but they don't retain heat like a puffy, cloth-covered mattress.

- Change the incandescent lights. Incandescent bulbs waste about 90 percent of their energy in the heat they emit, so tossing them to the curb will make a small difference in cooling your home while lowering your electric bill. Or switch off the lights.
- The same goes for many electronics. Turn off (and maybe even unplug) your appliances. Your computer, your tv, your chargers — all give off heat, as do your dishwasher and your clothes dryer. Even in standby mode, many electronics remain hot.
- Try drying your dishes and clothes the old fashioned way (air drying and line drying). You'll save energy and keep the house cooler.
- Start grilling. It's obvious, but we're going to say it anyway: Using your oven or stove in the summer will make your house hotter.
- Plant trees strategically. Planting trees or vines near light-facing windows will shield your home from the sun's rays and reduce the amount of heat your home absorbs. Your house gets hot because the sun beats down on it. Let nature help reduce your energy bills by planting deciduous trees on the east and west sides of your home; in the summer, their broad leaves will shade your house, while in the winter, bare branches won't stop the sun's warmth from reaching your walls. Trees and foliage can reduce the temperature by 11–25°C for un-shaded surfaces, such as asphalt. The difference will be less in your home but even a 5 to 10°F drop will make a big difference. Also, consider planting trees or shrubs to shade high-heat areas — air conditioning units that emit heat, for instance, and driveways and walkways that absorb it. Of course, sitting under a shady tree on a hot summer day isn't a bad way to pass the time, wherever the tree stands!
- Clean fans and filters. Dirty or clogged filters and fans or air-conditioning units and desk fans can reduce efficiency by up to 30 %. You can make immediate energy savings and increase the cleanliness of your workspace by maintaining them.
- If you have air conditioning, help it work efficiently. Clean the filters once a month and do preventive maintenance properly. Point adjustable flaps to the ceiling to slowly cool the rooms from the top. Splits must be placed in windows or walls near the centre of the room and in the shadiest space of the house.
- The easiest way to save energy consumed by cooling devices is by keeping the recommended indoor temperatures: in summer 26°C should be enough. Turning up your room thermostat by one degree, can lead you to 8% savings.

Mould and air humidity

- The main cause for development of mould is excessive humidity in the room. Regularly ventilate your apartment to replace the air indoor. If there is too much humidity in the air and the draft ventilation is not sufficient, try using an air dehumidifier that uses

condensation for extracting moisture from the air.

- In case of mould, move furniture away from the exterior walls by at least 5 cm, and raise it by at least 5 cm, to allow vertical air flow.
- The best solution to eliminate the cause of mould is to have good insulation of the building (floor, exterior walls, ceiling) without thermal bridges, which are weaknesses in the building construction resulting in heat loss. When we have successfully eliminated the causes for mould formation, we can begin the removal of it with one of the preparations for mould removal.

3 Lighting tips

In the average household lighting represents around 10 percent of the electricity consumption. Efficient lighting is far more than merely a matter of replacing light bulbs by energy-saving lamps. The goal of efficient lighting is to achieve the required lighting level with minimum energy expenditure over an area or a room. A number of techniques and measures are available in order to achieve the required results.

- Only switch on the lights in the rooms where you are. If the lights are on everywhere, it uses up a lot of electricity and costs more money. Switching off light whenever you leave the room is an easy way to save.
- Open the curtains. Then you won't have to turn on the lights so often. Make the most of daylight. For example, place your desk close to a window. Working nearer windows will save turning on lights too often.
- Only turn on the light in rooms where you need it. For example, above the table.
- Choose LED lamps that consume little electricity and light up for around 40,000 hours. An energy efficient LED lamps uses up to 80 % less electricity than an incandescent bulb and could last up to ten times longer.
- The different color temperatures affect our sense of well-being and our performance capabilities. It is therefore meaningful to have different color temperatures in living areas, according to requirement. Colder light (4,000 K to 8,000 K) is well suited for the workplace, while warm light (≈ 2.700 K) is better suited for living rooms and, above all, for bedrooms.

Warm White, Soft White The standard color of incandescent bulbs		Cool White, Neutral, Bright White Good for kitchens and work spaces		Neutral or Daylight Good for reading	
2700K	3000K	3500K	4100K	5000K	6500K

4 Electrical appliances tips

For several years, the share of the budget devoted to heating has been decreasing, but electricity consumption has been constantly increasing (+ 40% since 1990) as households are increasingly equipped with electrical and electronic devices.

Every piece of electrical equipment needs electricity. And that costs money. Consider carefully whether you really need the device and whether you can or want to pay the cost of electricity it uses. It might seem that having an electric knife is making your life much better, but paying for something you can do perfectly well by hand (if you are not suffering from impediment or illness) might also be a waste. So, before cramming your home with electric gadgets, think about their full costs.

More specifically, due to social roles and norms it is mostly women who work in the household, which gives them decision-making power in choosing which electronic devices to use or not to use to save energy.

There are many devices that indeed help us have a better life and with knowing how to manage them efficiently, some costs can be saved. This chapter gives some ideas how to reduce costs, while still having a good service of appliances.

- You can find a lot of information about the best and most economical devices on the internet, for example at <https://www.topten.eu/>.
- Buying devices that use less power is better. Ask the seller how much power the device consumes and how much it roughly costs a year. For example, if you buy 40-inch screen in energy class A+, it will use 67 kWh/year, which will cost you about 20 €/year. The same size of screen, but in energy class B, will use 117 kWh/year, which will almost double the annual cost to about 35 €/year. Therefore, think about it beforehand: What do you need? How big does the device have to be? What must the device be able to do? Does it pay off to take a more efficient device?
- If you do not set the devices to "Energy saving" mode, the devices use up more power. Hence, set your devices into an "Energy saving" mode.
- Be careful with second-hand equipment! Always look at how much power the devices consume. You're better off not buying the device if you can't find this information.
 - Maintaining your equipment well is also very important! For example, keeping your dishwasher for 14 years instead of 11 years saves you some money.

Switch off the stand-by

- Switch off all electrical appliances at the plug instead of using the 'standby' mode. Appliances are still using electricity when on 'standby' mode and connected to the socket, and account for 6 % of all electricity usage in home.
- 15 to 50 pieces of equipment per household remain on standby unnecessarily, which represents a cost of € 80 per year. A box lit 24 hours a day consumes as much as a



refrigerator in a year.

- Don't just turn off TVs with a remote control or put computers and other electronic devices on stand-by. Use a plug connector with a power switch. When switching off devices with the remote control, they continue to use power. 4 people doing this can cost up to 100 Euro a year.

Washing the laundry

- If possible, try running fewer laundry cycles.
- Some stains can be removed by brushing them off. Place the garment onto a flat surface and brush continuously in the same direction with firm strokes. No rotary movements, please, as they will rub the dirt deeper into the fabric.
- Always fill the washing machine. If the washing machine is not full, it costs a lot more. A half load wash can use more than half the energy of a full load setting.
- Wash with a low temperature (20 °C, 30 °C, 40 °C). If you wash at 60 °C, you use 3 times as much electricity in comparison to 30 °C. Nevertheless, wash once a month at 60 °C because it helps to maintain the machine in the long run and in combination with concentrated/heavy duty detergents reduces house mites and bacteria in your laundry – especially in winter, during flu period and with children or other vulnerable household members.
- Use the eco wash setting on your washing machine.
- As an added benefit, washing less and washing at lower temperatures also reduces wear and tear and colour bleeding.
- Modern detergents, especially biological detergents containing enzymes, clean stains and kill germs very effectively, even at low temperatures. Considering the harmful chemicals contained in many detergents, organic and fully biodegradable detergents are a much safer choice!

Drying the laundry

- Drying clothes in the tumble dryer is expensive and makes them harder to iron. Drying your clothes outside is free!
- Allow the laundry to air dry as often as possible. Using a class A dryer costs € 34 per year and € 110 per year for a class B dryer.
- If you are using a dryer, it could be worth reviewing its energy efficiency options.
- Drying similar fabrics together will speed up the drying process. The same goes for spinning your wash on the highest spin cycle.
- Wring or spin soaking wet clothes before putting them in your tumble dryer.
- Dry towels and heavier cottons in a separate load from lighter-weight clothes.
- If your drier has a "cool-down cycle" it allows the clothes to finish drying with the residual heat in the dryer.

Dishwasher

- Washing dishes in a full dishwasher is cheaper than washing by hand.
- Many dishwashers have low temperature washing programmes. Then the dishes are not washed so hot. This usually takes longer. But it's better for the dishes and you save electricity and money.
- Favor the "Eco" program of the dishwasher: up to 45% of electricity saved compared to the intensive program. Use the eco setting whenever possible.
- If you have a dishwasher, you do not have to rinse the dishes by hand beforehand.

Fridge/Refrigerator

- Keeping fridges and freezers away from cookers, heaters and out of direct sunlight uses less energy. It is not desirable to place refrigerators and freezers near heated bodies, stoves, etc. to prevent unwanted heating of refrigeration systems. Warming the refrigerator causes higher electricity consumption to maintain the desired temperature in the refrigerator.
- Set the correct temperature: 7 °C in the fridge and -18 °C in the freezer. Do not set the temperature to too cold, as this uses more electricity.
- Remove ice regularly from the walls of the freezer. Frosting, especially in the radiator area, reduces heat exchange and significantly increases the electricity consumption (by about 30%). If you notice frozen areas, turn off the refrigerator and thaw them as soon as possible. More than a 6 mm of ice build-up in your freezer reduces its efficiency.
- Always open the refrigerator briefly. Leaving the fridge door open any longer than necessary uses energy.
- Do not put warm things in the fridge. Wait till they cool down.
- Defrost frozen things by putting them in the fridge. Do not use the stove or the microwave as by defrosting in the fridge you avoid using electricity or gas, plus you make the work of the fridge easier.
- Overfilling your fridge reduces its efficiency – cold air needs to be able to circulate.
- Try to keep your freezer at least three quarters full.
- Keeping the back of your fridge-freezer clean helps to improve its efficiency.
- Uncovered foods in the fridge release moisture and make the compressor work harder.
- Check the seals on your fridge / freezer to ensure no warm air is getting in - the seals should be tight enough to hold a piece of paper securely when closed.

Computer

- A PC monitor left on overnight uses the energy to laser print 800 pages. Over a 12-month period, a PC left running for 24 hours per day will consume up to 2500kWh/year of electricity, which is the equivalent of a normal 2 member household (see table 1 in chapter 1).

- Activate your PCs Power Saving Device: Right click on the desktop > Properties > Screen Saver > Power. Your monitor will reactivate within a few seconds after moving your mouse.
- Switch off computer screens when away from your desk (e.g. lunch and meetings) and turn the PC off at night.

TV and Set top Box

- Leaving your TV and all accessories attached to it on standby all the time could cost you up to 30 euros per year.
- Also turn off the screen when you take small breaks. This also saves electricity.
- Turn TV and computer screens brightness down. Not only is it good for your eyes but then the devices also need less power.

Cooking and baking

- Cover the pans during cooking: up to 4 times less electricity or gas is consumed. Vegetables, potatoes, eggs and other things are best cooked in a pot with a lid.
- Use as little water as possible. If you use a lot of water whilst cooking, you need more electricity.
- Always heat water for tea, coffee or stock using a kettle. Take only as much water as you need. If you heat water on the stove not only will it take longer but will also cost twice as much.
- Switch off the hobs a few minutes earlier. Even if the cooking time is not over yet. Leave the pot on the warm hob. Until cooking time is over.
- When baking, use convection rather than top/bottom heat.
- Food cut into smaller pieces cooks quicker.
- It's better to cook small items under the grill rather than in the oven.

5 Water

Over 90% of water is used for personal hygiene, sanitation, laundry, dishes and household maintenance. Less than 10% is used for drinks and meal preparation. Here are some tips on how to save water. According to the World Health Organization, between 50 and 100 litres of water per person per day are needed to ensure that most basic needs are met and few health concerns arise. Yet, since women do more household work than men, they also use more water for cooking, cleaning, personal hygiene, parenting or other household/care work activities. That is why water and energy savings must not be made at any price: Living in dignified conditions is a top priority.

- Increases in the water bill can sometimes come from small hidden leaks. A dripping tap loses an average of 5 litres/hour, or 120 litres/day ... For a leaking toilet flush, it's more than 600 litres/day, or the daily consumption of a family of 4 people. For spotting water



leaks in your home, read the numbers on your water meter just before you go to bed. When you wake up, if these numbers are not the same and no one used water overnight, look for the leak!

- Use a tap aerator or efficient showerhead to reduce the water flow: for a shower with a flow reduction of 50%, it saves up to € 160 per year (for an average price of water at 3,70 EUR per m³). Tap aerators and efficient shower heads can be found in technical stores and fitting it is an easy job even for technically not very experienced people. Install aerators to save water! This will, with minimal investment, daily and unnoticeably reduce energy bills for water heating.
- If you do the dishes manually, set some water aside to wash up instead of letting the tap run the entire time.
- A full bathtub of water uses up to 5 times as much energy and water compared to 1 shower. Showering is better than bathing because you need less hot water when showering, saving energy and money.
- Reduce the temperature of the water heater to 50 ÷ 55 °C. Changing the preheating temperature from 60 °C to 55 °C can reduce about 10 % of the electrical energy used by the boiler. To eliminate developing bacteria it is necessary to increase the temperature to 60 °C once a month for a few hours to eliminate them.
- Use the night rate to heat water in the boiler. Using a night tariff does not save you electricity, but it will reduce your bill. For two-person households, annual savings of 35-40 euro are realized in the use of a night-time heating water tariff.

6 Body heating and cooling tips

Focusing the heating or cooling effects on your body uses much less energy than heating or cooling an entire room or even an entire flat or house. One thing that needs to be stressed is that keeping your body warm or cool does not mean you should suffer discomfort or even indignity. It is fine to use an extra blanket, socks or sweater, but putting extra layers to lower your consumption of heat or keep your heat off might not offer the comfort and the dignity you need and deserve.

Heat your body

- Comfort, relaxation and warmth comes from enjoying a hot drink. Grab your mug and enjoy.
- Warming the neck, wrists, toes and ankles is important when trying to keep comfortable in a cold(er) environment.
- Have a 'heat meal': Cooking heats the body – and the kitchen! Hot soups help you warm up your body. Although it might seem as a privilege to cook a hot meal, it is desirable to cook a proper meal, not only for the warmth, but also for the health in general. Try not to restrict energy use for cooking a proper meal!
- Physical activity at home makes you warm. If you are not suffering from impediment



or illness, try to move and be active to keep warm. Even a quick walk in the cold can help you feel warmer.

- Wear slippers, an extra layer of clothing and cover up with that cosy blanket you've still got somewhere, especially when sitting or lying down for a while. However, this does not mean one should wear many layers and leave the heating turned off, if one is still cold.

Cool your body

- Fill a mixing bowl with ice (or something equally cold, like an ice pack), and position it at an angle in front of a large fan so the air whips off the ice in an extra-chilled, extra-misty state. Trust us: It's magic. You can also use a spray bottle to spritz yourself while in front of the fan, which can dramatically change your temperature; as the water evaporates off your skin, your body sheds heat.
- From sipping tasty iced drinks to applying a cold cloth to strong-pulsed areas like your neck and wrists, cooling yourself from the inside out is not a bad idea. Other tricks include being smart about your clothing choices. Also try keeping a bowl of cool water by your bed and dipping your feet if you feel warm in the middle of the night.
- Cold air fans and personal fans targeting a small area use a lot less energy than cooling an entire home.
- Slightly dampening your sheets or popping them in the freezer before bedtime will help you chill out. Place the sheets in a plastic bag first (unless smell of frozen pizza is your favourite aromatherapy scent). Granted, this won't keep you cool all night, but it will provide a brief respite from heat and humidity.
- Here's a year-round tip for keeping utility costs down: Buy a hot water bottle. In the winter, fill it with boiling water for toasty toes without cranking up the thermostat. During the summer, stick it in the freezer to create a bed-friendly ice pack. Fill a water bottle, and put it in the freezer before placing it at the foot of your bed for cooling your feet.
- For a cold compress on really hot nights, fill a sock with rice, tie it off, and stick it in the freezer for an hour or so. The compress will stay chilly for up to 30 minutes — definitely enough time to nod off.
- Take a cold shower or go swimming. It may sound obvious, but it's worth saying: If you're hot, lower your core temperature by immersing yourself in cold water. Unless there's 100% humidity, the evaporation of water off your skin will further cool you once you emerge from the water. For a shortcut, dab cold water or ice cubes on your wrists. Because your blood vessels are so close to the skin there, you'll feel the cooling effects sooner.
- Get a leg up on hydration by drinking a glass of water before bed. Tossing and turning and sweating at night can result in dehydration, so get some H2O in the tank beforehand. (Pro tip: Just 8 ounces will do the trick, unless you're really into those 3

a.m. bathroom runs.)

- Instead of big, heavy meals, go for smaller, lighter dinners, which are easier to metabolize. It takes a lot more energy for your body to break down protein than fats or carbs. So, swap that steak for a platter of fruits, veggies, and legumes. It also helps to eat cold meals. Just as drinking a nice cold drink cools your body, eating cold food helps keep your internal temperature lower on a hot day. Try a simple watermelon salad, for instance, or a cold soup.

7 Clever little investments

There are a few small investments into simple devices that can make a difference to your energy and water use. Perhaps those ideas are rather unusual, but they can help to take control over your bills. If you were not involved in finances yet, now can be the time to arrange some clever small investments. Here are some simple suggestions that can help you to save energy and money, no matter how much technical expertise you have or have not:

- LED lights: various forms and power. More than 80% savings in compared to conventional incandescent light bulbs.
- Seals for windows and doors: seals reduce the space between window or door and the frame, where air escapes from the room. The seals are foam or rubber bands, mostly self-adhesive tapes that are easy to install.
- A thermometer: placed in the freezer, the refrigerator and everywhere in the house, it allows to check if the temperature is adequate. You will be able to adjust your freezer, fridge and radiators to avoid consuming too much.
- A power strip with a switch for on/off: It is the essential accessory to save electricity. Connect multiple devices on a power strip, which will allow you to simultaneously switch off all your equipment on standby. This can lead up to 10% savings on your electricity bill!
- A programmable mechanical outlet: Thanks to a weekly and/or daily programming system, this socket with a timer to automate the switching on/off of your electrical devices. By precisely determining their operating periods, you will save money for electricity.
- An hourglass or a timer in the bathroom: This little object found in almost every kitchen can be very useful also in the bathroom. It will help you not to exceed 5 minutes in the shower.
- An economical shower (water saving shower head): With the same comfort of use as a conventional hand shower, it limits the output flow of water while optimizing the jet pressure. You save up to 75% of water.
- A frother (or aerator): Once placed on your faucet, this small device injects tiny air bubbles in flowing water. The tap flow is reduced from 30 to 50%.

8 And some bigger investments

While being aware that saving up money for big investments is a difficult task, this section does present a few ideas what investments can be done to achieve significant changes in costs and well-being. If you feel more confident when you talk to your family about money, discuss bigger investments as a household and find solutions together.

Insulation

- Insulate your facade and roof - Choose external wall insulation solutions to gain the best results. Otherwise, opt for interior wall insulation or other insulating technologies.
- As much as a third of your heating costs could be escaping through your roof. Loft insulation is the most cost-effective energy saving measure and the easiest to install. While attic fans may not help to significantly cool your home, attic insulation can by keeping cooler air in your home from escaping through the ceiling.
- Up to a third of the heat produced in your home is lost through your walls.
- Solid walls can also be insulated by internal wall insulation.
- Watch out for air and water infiltration through doors and windows - cover cracks with cheap material as silicone, filler or draught excluders.
- Invest in better doors, windows and insulation. While you're checking out the roof, consider more energy efficient options for windows, doors and insulation. Better insulation and tighter seals will help you keep your home cooler in extreme heat and warmer in winter with less energy.

Cooling

- When buying a new cooling system, pay attention to its energy label - choose a high energy efficiency system (A+++).
- Insulated window films, for example, are a smart purchase as they work similarly to blinds.
- Invest in blackout curtains. Blackout curtains block sunlight, naturally insulating the rooms in which they're installed. Neutral-coloured curtains with white plastic backings can reduce heat gain by up to 33 percent.
- Install awnings. Like trees, awnings can save you money on energy bills by cutting down on the heat your house absorbs.
- Get a cool roof. Cool roofs stay cool, and reduce the amount of heat transferred to the home. So how do you get a cool roof? One of the most affordable ways is to paint your roof with a light-coloured paint specifically for roofs. Almost every type of roofing can be painted, even shingles, but before you start slinging a paint brush make sure you check with your roofing manufacture to see if painting it voids your warranty.

Heating

- Heating with pellet boiler is up to 30% cheaper than heating with damp wood and / or coal. Although the price per ton of pellets is higher than heating with wood and coal, then if we compare the prices for obtaining the same amount of heating energy, pellet heating is the cheapest. This is due to the fact that the pellets are first of all much more calorific (kWh/ton) than other fuels (wet wood and / or coal) and secondly, they are burned in boilers with much higher efficiency - up to 90%, compared to 35 ÷ 40% for old stoves.

Household appliances

- Buying more energy efficient appliances could save you money over time, when compared with similar products.
- Energy saving fridges and freezers use up to 60 % less energy than an older model.
- Replace your inefficient fridge-freezer with an A+ or A++ rated model and save up to 440kWh/year. Look out for the Energy Saving Recommended logo.
- New washing machine with energy class A - A++ could save up to 100kWh.
- Buying new dryer with class A - A++ could save up to 420 kWh/year. It costs about 20 % less to run a cycle on an energy saving dishwasher as it does on an older, less inefficient machine.
- If you are buying a new dishwasher, look for the Energy Saving Recommended logo. This is your guarantee that you are buying one of the most energy and water efficient machines available. A new dishwasher with class A - A++ could save 180kWh.
- Using solar collectors is a great way to save on electricity bills since renewable energy from the sun is free. See labels for energy efficiency of boilers in which water is heated with solar panels. Where technically feasible and economically justified, the installation of solar collectors is one of the best options for water heating.
- Replace your old inefficient boiler with a new one, equipped with energy efficiency label of the highest class! Consider the volume of the tank to the needs of your family! The investment in higher class will be repaid by energy savings. A new water heater with class A-A++ could save more than 400kWh/year.
- Electric toasters are quicker and more efficient than electric grills for making toast.
- Electric deep fat fryers are safer and more economical than chip pans.
- Electric kettles boil water more efficiently than a pan on a cooker.
- Microwaves are quick, easy to use, very economical and energy efficient.
- A new oven with energy class A-A++ could save about 360kWh/year.
- New TV with energy class A - A++ could save about 160kWh/year.
- A computer with energy class A - A++ could save 2000kWh.

9 Energy saving myths

When it comes to saving energy, some things are regarded as taken for granted, but are simply not true. It is worth knowing which of your beliefs could simply be myths – this will



save you costs and improve your well-being at home. The following points may help you to engage in a constructive conversation and clear up common myths:

- Keeping a fan on cools a room: Fans are designed to move air around, not to cool it. Having a fan on allows people inside of the room to feel cooler, but not the air in the room itself. Leaving a fan on when you leave your home is simply wasting energy while the room temperature is not cooling off at all.
- Setting the thermostat temperature to a higher degree heats the home faster: No matter what temperature you set your thermostat on, your furnace or boiler will work equally as hard and fast to meet that goal. The only difference achieved by setting the temperature to a higher degree is that the system will work for a longer period, therefore using more energy. The same applies to air conditioners when set to a lower temperature than desired. Another downfall of setting the heat higher is that, eventually, the air conditioner may kick on to cool the room back down to your actual desired temperature.
- Closing vents and registers in unused rooms saves energy: All systems produce enough airflow to fill their ductwork systems and will continue to do so even if one or more of the air vents in your household are closed. Closing AC vents simply redirects the airflow into other rooms of the home via other open vents. With this extra airflow being transferred to other open vents, the overall air pressure increases, and the system works even harder. Closing vents to save energy is a nice thought, but never the actual case.
- Hand-washing dishes rather than running them through the dishwasher can save you energy: Hand-washing a load of dishes requires a lot of hot water, and therefore a lot of energy. Today, most dishwashers have energy-efficient settings. These settings typically allow you to run a load of dishes using less water and less energy.
- Appliances don't use energy when they are turned off: Thanks to standby power settings, most appliances constantly use energy in order to be ready for immediate usage. These "energy vampires" cannot be turned completely off without unplugging the device altogether.
- Electronic chargers don't use energy if plugged in and disconnected from the device: Although this may be true for some chargers, most chargers use "vampire power" while plugged in, but not connected to their device. If your charger feels warm to touch, it is most likely using vampire power. It is best to just assume that all your chargers use this type of power and to unplug them when they are not being used.
- Most heat is lost through windows: While heat can be lost through windows, window heat loss is only a small percentage of the total heat loss in a home. Typically, walls account for much more heat loss because of their large surface area. It's best to consider insulating walls before upgrading windows since heat loss through windows is usually minimal.
- Sleep mode or hibernate mode is just fine for computers overnight: Putting your



computer into sleep or hibernate mode, rather than shutting it down, suspends it from waking and sleeping modes. Quite a lot of energy is used to accomplish this state so that the computer can be ready to pop back on at a moment's notice. It is best to shut your computer down all the way overnight or when you are planning on not using it for a while.

Finally, keep in mind that energy saving should never result in feeling less comfortable at home or in adversely affecting your and your family's' health. If you apply any of these measures and they do not result in energy or money saving, do not force them further. One of the main goals of energy saving is to improve your home comfort and health, as well as giving you better control of your energy and water use without an increase (or hopefully a decrease!) of your bills. Every person is unique and knows best about his or her own needs and particular situation.

10 Further useful steps, services and contacts

It is important to know that if you have problems with access to energy and water, you are not alone. There are many people, organisations and tools that are with you to help you solve some problems that you currently have. Check in your country if you could get some help and support for:

- Understanding energy and water bills
- Changing of energy supplier
- Fighting illegal disconnections
- Working out energy or water related debts
- Social services
- Energy efficiency services
- Health services
- Financial mechanisms available
- Links to helpful forms (e.g. complaint about disconnection – wherever there exists something useful)

Literature

- <http://www.project-idea.eu/tips-tool/>
- <https://www.ademe.fr/sites/default/files/assets/documents/guide-pratique-economiser-eau-energie.pdf>
- https://www.stromspar-check.de/fileadmin/user_upload/Dokumente/Downloads/Stromspar-Check_Energiespartipps_2018_EN.pdf
- http://www.energise-project.eu/sites/default/files/content/ENERGISE_Laundry_Challenge_Leaflet.pdf
- <http://www.energise->

project.eu/sites/default/files/content/ENERGISE_Heating_Challenge_Leaflet.pdf

- https://www.huffpost.com/entry/ways-to-cool-your-home_n_5516182?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAF3h6LCyQ0qRiP8EoaxDDmNiDoDCVaHrqKNI3FeZ4x-BCdR9ITZISv1tp1JccziIkUIDVj8Yg3W4bo8ahbd989t001lpXPhxTpIQj5IeAdFdBnlKTX5s3Xn7O-GcrOy80D6yN2ZXIe64alrLUIEEow9D9zZNQl3VxOsq4hFrUc5E
- <https://www.goodhousekeeping.com/home/a25785/cool-without-air-conditioning/#slide-9>
- <https://www.apartmenttherapy.com/beat-the-heat-without-turning-89459>
- <https://greatist.com/happiness/tricks-to-sleep-in-the-heat#Cool-as-a-cucumber-how-to-beat-the-heat>
- <https://commonsensehome.com/keeping-your-house-cool/>
- <https://broschueren.nordrheinwestfalendirekt.de/broschuerenservice/energieagentur/auszeit-energiesparen-kosten-senken-umwelt-schuetzen/2726>
- <https://www.daserste.de/information/ratgeber-service/haushaltscheck/03112014-haushalts-check-2-welche-waschtemperatur-100.html>
- Porcar, E., Pons, A.M. and Lorente, A., 2016. Visual and ocular effects from the use of flat-panel displays. International journal of ophthalmology, 9(6), p.881.

