

SWARTLAND MUNICIPALITY

CONSERVATION OF ELECTRICITY

SAVING TIPS AND MEASURES

Electricity will become much more expensive as energy resources to generate electricity on a large scale become scarcer. Everybody must save electricity, not only because of the shortage in generating capacity, but also to save money and to protect the environment. The more we save the less likely load shedding will become.

Please contribute to this effort by applying the following saving tips and measures.

1. Hot water system (geyser):

Did you know?

It takes a 3kW, 150l geyser element to heat the water from 20 °C to 65 °C in the order of 2 hours 40 minutes and consumes 8kWh (measurement unit for energy) which amounts to R14.64 at an average cost of R1.83c/kWh. To heat 150l of water by 45 °C (from 20 °C to 65 °C) with a 9kW element will cost the same as with a 3kW element. The 9kW element will just take a third of the time the 3kW element would take. Changing the size of the element will not reduce energy consumption.

On average, an electrical geyser consumes 40% of the total home's consumption. The lowering of the temperature, from 70°C to 60°C on average reduces the cost of supplying hot water with 4.8%. If you install an additional layer of insulation (50mm insulation for example) around the geyser and pipes, the losses can be reduced by between 20% up to 50%. No gadget, or additional control apart from installing a solar water heater, can save more than proper insulation.

To further reduce hot water consumption one can make use of water conserving showerheads, self-closing hot water taps or mixing valves and flow restrictors and aerators in sink taps.

Saving Tips:

Shower instead of taking a bath, turn down the thermostat to 60 degrees C, install a geyser blanket, insulate at least the first 1,5m of hot water outlet pipes and 1 meter of the cold water pipes, use less hot water, if small volumes of hot water is required, rather boil water in a kettle than using water from the geyser. If you can, switch off the geyser between 06:00 and 22:00 daily and for longer periods if you are not at home. You will not use more electricity by re-heating cold water because you save on the losses incurred by keeping the water at a constant temperature.

The best method to save is to install **solar water heating panels**. Our sun emits massive amounts of energy. In South Africa, solar radiation reaches up to 6.5 kWh/m², one of the highest levels in the world. By comparison, parts of Europe only receive about 2.5 kWh/m². Solar energy is an abundant source of renewable energy, making it an obvious candidate when seeking alternative sources of energy.

Did you know?

Solar water heating also benefits the environment significantly. A 150l solar water heater will replace in the order of 4.5kWh/day of electricity which can save an estimated 1.7 tons of carbon emissions per year.

Lighting:

Use **compact fluorescent lamps (CFL) or light emitting diode (LED)** instead of ordinary incandescent (filament type) lamps wherever possible, switch lights off when a room is not occupied and use energy efficient lamps with automatic movement detection for exterior lighting. Failed fluorescent lamps should not be broken to avoid the release of mercury and should be placed in a plastic bag and handed in at the Highlands disposal facility or at suppliers.

2. Electrical stoves:

Use a pressure cooker when preparing foods that take a long time to cook, use a stove with a convection oven, keep oven doors closed until food is cooked, bring foods to the boil on "high" setting but turn down to simmer until cooked, clean stove plate reflectors and make sure that pots and pans completely cover the stove plates. Avoid using a conventional oven and rather use a microwave oven if at all possible.

3. Microwave ovens:

Did you know that a conventional oven uses the same amount of power as 18 microwave ovens! Defrost food in the refrigerator or outside instead of in a microwave oven as it is more economical, use a microwave oven to cook small to medium quantities of food.

4. Refrigerator:

Don't open the door unnecessarily, make sure the seal is intact, turn off and empty the refrigerator when going on holiday, let hot food cool down before placing it in the refrigerator, defrost your refrigerator regularly, and store foods apart on refrigerator shelves.

5. Freezers:

Freezers work harder to remove heat and have to use more power. Avoid placing warm items in the freezer. Defrost regularly.

6. Heaters:

Electrical heaters of any type consume significant amounts of electricity and should be avoided. It is important to insulate your home to prevent heat loss and if heating is still required, rather use other types of fuel, i.e. gas, wood, paraffin, antracite etc. Use an electrical blanket in lieu of space heating, but turn the blanket off or to a lower temperature when in bed.

7. Space heating:

Electrical under floor heating is very expensive to operate, especially if the room is not well insulated. Energy losses can be very high, resulting in very inefficient heating and should be avoided.

8. Air conditioners:

Although air conditioning systems utilizing heat pump technology is much more efficient for space heating compared to direct electrical heating, the proliferation of such systems in residences contribute significantly to the growth in demand for electricity. The prolonged (daily) usage of an air conditioning system may result in this device becoming the largest user of electricity in your home. It is recommended that air conditioners only be used during temperature extremes and be switched off upon leaving the room.

9. Dishwasher:

Fill your dishwasher completely before operating, avoid using the drying cycle, connect your dishwasher to the cold water supply and clean filters. Avoid using the dishwasher during peak periods (07:00-10:00 and 18:00-21:00). If at all possible, only use the dishwasher during off-peak periods, i.e. after 22:00 up to 06:00.

10. Small appliances:

Use toasters, electric grills and skillets, slow cookers, electric pots and bottle warmers which usually require less energy than the stove, use an electrical kettle to boil water, not a saucepan.

11. Automatic washing machine:

A front loading washing machine uses less water and costs less to operate, use a lower warm water setting to cut down on energy needed to heat the water, make sure your load is full before washing. As for the dishwasher, avoid using the machine during peak periods.

12. Tumble dryers:

When the weather is good, try drying your clothes on a line outside. It's just as effective as the tumble dryer and you'll save a lot of money in the long run. Tumble dryers with an electronic humidity control are the most efficient. Use correct temperature settings to minimise the amount of electricity used, remove water before putting clothes into the tumble dryer and by removing clothing promptly from the dryer and folding them carefully, many items will require no ironing. As for the dishwasher, make a point to only use the tumble dryer after 22:00 up to 06:00.

13. Ironing:

Use a thermostatically controlled iron. Switch the iron off once it has reached the correct temperature and complete the ironing on stored energy, use distilled water in steam irons, turn the iron off when you are not using it, iron low temperature fabrics first to reduce warm-up time.

14. Kettle:

Don't fill the kettle; boil only enough according to your need.

15. TV, Audio and Electronic Equipment:

Did you know that if you leave your TV on standby mode, it uses up to 50% of the power than when it is actually on? So, switch off your electronic equipment at the power outlet if it is not used.

16. Swimming pool Pumps:

Set the timer to only operate the swimming pool pump at night during the off-peak period, i.e. 22:00-06:00. Remember to reset the timer if required after each disruption of the power supply. Reduce the duration of operation as much as possible to suit the season.

17. Insulation:

Insulate the ceiling, seal air gaps in the home, and make use of the home's material (such as concrete, brick and tiles) to adjust temperatures instead of using a heater or cooling appliances (for example: a concrete floor absorbs more heat than a floor covered by carpeting).