



Photo: Mark Lewis

ENERGY IN YOUR HOME

Cape Town's State of Energy Report indicates that households use 15% of all the energy used in Cape Town and 38% of all electricity consumed. Liquid fuel for transportation comprises half of all the energy used in Cape Town.

Energy is a big cost for many of Cape Town's poorer households – often using as much as 15 to 25% of a household's income. Almost all homes in Cape Town are now electrified. Many people still use paraffin for cooking and heating purposes as they may be unable to afford to buy new electrical appliances, or pay for electricity. Paraffin can also be bought in small quantities, or borrowed from neighbours, or on credit from local spazas when cash is hard to come by. Although fire-wood may be collected 'free' of charge from alien stands, this is very time-consuming and may be dangerous. There is also the danger of damaging the environment due to over-harvesting. Shack fires, poor household air quality, time spent collecting fire-wood and paraffin poisoning are some of the 'energy burdens' suffered by poorer Capetonians.

Mid to high-income homes on average use twice as much energy as lower income homes in Cape Town and because of their greater use of electricity (a big carbon-producing fuel) they are responsible for up to three times as many carbon emissions. As our electricity prices in South Africa are very low, electricity

costs in middle to high-income homes are only around 3 to 5% of income, which means there is not a big financial incentive to save money through greater efficiency in the use of electricity. Electricity prices are, however, set to rise.

Knowing how much energy your household uses – and what you are using it for – will help you to prioritise which areas of energy use you could improve in your home. This will help save you money, improve the health and safety of your home and environment and support our City's energy targets.

Households can save 20 to 30% of their electricity consumption – often with no, or minimal, financial outlay. Power stations use two litres of water for every unit of electricity (1 kWh) generated. Saving electricity saves water!



Meeting energy needs uses 15 to 25% of poorer households' income, but only around 2 to 3% of wealthier households' income.

Find out where you can save energy and money in your home



Households using mainly electricity

This exercise will help you understand where you use electricity in your home and where savings can be made. A list of the typical electricity consumption of household appliances is provided for your assistance.

Step 1: Collecting the data

- ✳ In Column 1 of the table on the next page, list the appliances you have in your home.
- ✳ In Column 2 note the electricity power (W) of each appliance. Appliance power is usually given on the appliance itself. However, this often indicates maximum power use, which can be much higher than average power use. The table, 'Typical Home Appliance Electricity Consumption', provides estimates for common appliances and may be more helpful.
- ✳ In Column 3 record (in hours) how long each appliance is used per day (consider differences in weekday and weekend use and summer and winter use and work out an average for yourself).

Note: Some appliances switch on intermittently, such as fridges and hot water cylinders. Again, in these instances the table 'Typical Home Appliance Electricity Consumption' may be used to estimate your consumption.

- ✳ If you have more than one of any appliance, such as light bulbs, write this in Column 4.

Step 2: Doing the calculations

- ✳ To find out your daily electricity consumption use this simple formula: (watt x hours used per day)/1000 = daily consumption.

Note: 1 kilowatt (kW) = 1 000 watts.

- ✳ What you are doing here is multiplying Column 2 by Column 3 and then by Column 4 (more than one appliance). This final figure is then divided by 1 000 in order to convert from watt hours to kilowatt hours. Fill in this total in Column 5.
- ✳ To get your monthly consumption figure, multiply your total daily figure by 30 days and fill this in in Column 6.
- ✳ Add up your total kWh usage for all appliances to reach your grand total electricity consumption.

Step 3: Identify priority action areas and potential for savings

Examine your results. Which areas of the home use the most electricity? Identifying this and taking simple, effective and cost-saving actions (detailed in the next section) will help you to reduce your electricity consumption.

Typical mid-income electrified homes use around 774 kWh/month (around R250/month) electricity. The majority of this – up to 60% – is used in heating water through their geyser. Lighting is often the second largest consumer of electricity. Installing solar water heaters and switching to compact fluorescent light bulbs provides opportunities to make a substantial saving in household energy – read on to find out more!

Household Electric Appliance Audit Sheet

1	2	3	4	5	6
Appliance	Power use (watt)	Hours/day in use	Number of appliances	Ave kWh per day (watt x hours/1000)	Ave kwh per month
e.g. light bulb - Incandescent	60w	4	7	$60 \times 4 \times 7 = 1680 / 1000 = 1,68$	$\times 30 = 5,04$
Electricity consumption total					

Typical Home Appliance Electricity Consumption

Appliance	Power use (watts)	Ave hrs/day in use	Appliance	Power use (watts)	Ave hrs/day in use
Lighting			Refrigeration		
Incandescent bulb (40W)	40	5	Freezer (chest)	105	4
Incandescent bulb (60W)	60	5	Fridge with freezer	158	5
Incandescent bulb (100W)	100	5	Fridge – no freezer	250	2
CFL (12W)	12	5	Home maintenance		
CFL (18W)	18	5	Dishwasher	2 500	0,9
CFL (20W)	20	5	Vacuum cleaner	1 000	0,5
Security (120W)	120	0,3	Laundry		
Cooking			Iron	980	0,4
Coffee machine	670	0,5	Iron (steam)	1 235	0,8
Electric stove	3 000	2	Washing machine	3 000	0,75/load
Frying pan	1 250	0,4	Tumble dryer	3 300	0,5/load
Hotplate – large	2 400	0,3	Music, entertainment, home office equipment and other		
Hotplate – small	1 275	0,2	Burglar alarm	10	24
Kettle	1 900	0,3	Cell phone charger	9	2
Microwave oven	1 230	0,8	Compact disc player	9	0,4
Toaster	1 010	0,3	Computer	134	1,5
Snackwich	1 200	0,3	Cordless phone	2	15
Food processor	166	0,2	Fax machine	45	13,6
Geyser			Hair drier	647	0,1
Geyser (electric)	2600	4,4	Radio	12	3
Geyser (solar with electric backup)	2600	1.7	M-Net decoder	28	12,1