



The Environment Centre NT

# cool communities

## COOL SOLUTIONS TO GLOBAL WARMING

An Australian Greenhouse Office project delivered in collaboration with the Environment Centre of the Northern Territory



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In this fragile environment we are living in it is important that we use the resources available to us with care. Although we can obtain power at the flick of a switch it does not mean that the electricity being provided is coming from an inexhaustible supply. Similarly, because we cannot hear or see the power we use does not mean that electricity generation and use is not having a harmful affect on the environment.

Did you realise that for every kilowatt of power you consume in the Northern Territory, 0.55kg\* of Greenhouse Gas is sent into the atmosphere? See overleaf how most households use power and how much Greenhouse Gas is produced by the appliances you use. Help minimise the future deterioration of the environment by using power wisely. Listed below are a variety of ways to help you reduce your power usage and in so doing help protect the environment, save yourself money and improve your lifestyle.

### \$\$ Save Money by Saving Energy & Reduce Greenhouse Gas Emissions \$\$

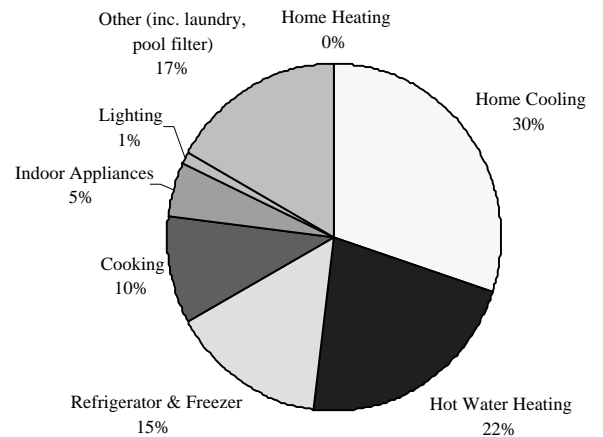
Annual Energy Cost/CO <sub>2</sub> Emissions	Stage 1 Minimal Investment	Stage 2 Moderate Investment	Stage 3 Higher Investment
Home Cooling \$336/1320kg	Ventilate by opening windows and doors Only cool rooms which are in use by closing doors to unused rooms Any adjustable louvres should be directed between horizontal and up when cooling	Install ceiling fans to circulate cool air Shade north facing walls, e.g. encourage plant growth on a trellis Seal air-leaks around doors and windows in air-conditioned areas	Insulate your ceiling and walls - ensure air-conditioners are shaded from the sun Buy a variable speed drive (VSD) air-conditioner Check the energy rating when purchasing new air-conditioners
Hot Water Heating \$246/968kg	Fix dripping taps Turn off heater system if the house is unoccupied for three days or more Use cold water cycles when washing clothes	Insulate exposed hot water pipes Add extra insulation around hot water tanks Replace your shower heads with a water "efficient shower heads"	Install a solar hot water system Choose an appropriately sized system Check the energy rating of prospective systems
Refrigeration & Freezer \$168/660kg	Ensure the rear of your fridge/freezer is well ventilated Locate your fridge/freezer away from heaters and/or external walls Don't over/underfill & only put in completely cooled food	Clean condenser coils at least once every two months For manual defrost fridges do not let ice build up more than 6mm Turn off your extra bar/garage fridge until you really need it	Replace damaged seals Purchase an energy efficient fridge
Cooking \$112/440kg	Optimise use of your oven and stove top; cook things at the same time Thaw food naturally before cooking Use lids on pots and pans Ensure saucepans size matches the hot plate	Minimise the use of your stove; buy a pressure cooker, toaster, etc.	Buy a microwave oven - effective and cheap for many meals Check the energy rating of new cookers - fan ovens are best
Indoor Appliances \$56/220kg	Don't leave appliances on standby - turn everything off at the wall Only use dishwashers when they are full	Buy socket timers to use when you are away - don't leave lights on permanently	Replace appliances with more appropriately sized ones Check the energy rating of new appliances
Lighting \$11/44kg	Turn lights off when you leave a room Make sure the sensitivity of security lighting is correctly set Move furniture so you can make maximum use of natural day light	Buy bulbs of a wattage to suit the room Buy energy efficient light bulbs - fluorescent lights use 75% less power than incandescent and last eight times as long	Redesign the lighting to minimise the number of bulbs Install dimmer switches When redecorating remember that light coloured surfaces increase light reflection
Other (incl. laundry, pool filters) \$192/748kg	Wash clothes when you have a full load When possible dry clothes on the line instead of using a dryer, particularly in Dry Season In Dry Season change the timer on your pool pump so that it operates less frequently	When buying a washing machine make sure it is an appropriate size for your needs	Buy an energy and water efficient washing machine - front loading machines are more water and energy efficient for hot and warm water washes and require less detergent

**Keep this chart handy and remember the more you tick off the more money you will save**

\*: Data supplied by PAWA, based on 100% of power used being generated by gas turbines

## Annual Electricity Use and Greenhouse Gas Emissions for Average Household in Darwin

Where it is Going	Percentage of total annual electricity use*	Cost per year	Emissions per year
Home Cooling	30.0%	\$336.00	1320kg
Home Heating	0.0%	\$0.00	0kg
Hot Water Heating	22.0%	\$246.00	968kg
Refrigerator & Freezer	15.0%	\$168.00	660kg
Cooking	10.0%	\$112.00	440kg
Indoor Appliances	5.0%	\$56.00	220kg
Lighting	1.0%	\$11.00	44kg
Other (inc. laundry, pool pumps)	17.0%	\$192.00	748kg
<b>Total</b>		<b>\$1121.00</b>	<b>4400kg</b>



Total Annual Consumption* (kWh)	8000
Average Daily Consumption* (kWh)	22
Domestic Standard Tariff (cents/kWh)"	14.02
Greenhouse Gas Emissions (kg/kWh) <sup>^</sup>	0.55

\*: Data compiled from unquantified estimates & calculations by K. Frazer on behalf of PAWA  
 ": Price of domestic standard tariff correct at time of publishing  
 ^: Data supplied by PAWA

## Average Electricity Use and Greenhouse Gas Emissions for Household Appliances

Appliance	Per Hour			Appliance	Per Hour		
	Energy (kW)	Cost (c)	Emissions (kg)		Energy (kW)	Cost (c)	Emissions (kg)
<i>Home Cooling</i>				<i>Indoor Appliances</i>			
Room air-conditioner (0.75HP) <sup>T</sup>	0.820	11.5	0.45	Dishwasher	2.400	33.6	1.32
Room air-conditioner (1.50HP) <sup>T</sup>	1.440	20.2	0.79	Colour Television	0.250	3.5	0.14
Room air-conditioner (2.50HP) <sup>T</sup>	2.500	35.1	1.38	Radio	0.100	1.4	0.06
Ceiling Fan	0.080	1.1	0.04	Stereo	0.150	2.1	0.08
<i>Home Heating</i>				Vacuum Cleaner	0.500	7.0	0.28
Bar heater (single bar)	1.200	16.8	0.66	Hair drier	1.000	14.0	0.55
Bar heater (double bar)	1.800	25.2	0.99	Computer (active)	0.110	1.5	0.06
Portable Electrical Fan Heater	0.725	10.2	0.40	Computer (idle)	0.100	1.4	0.06
<i>Hot Water Heating</i>				Computer (energy star activated)	0.050	0.7	0.03
Electrical Storage Off-Peak <sup>S</sup>	0.175	2.5	0.10	Computer (monitor off)	0.040	0.6	0.02
Electrical Storage <sup>S</sup>	0.450	6.3	0.25	Computer (switched off at power point)	0.000	0.0	0.00
Electrical Instantaneous <sup>S</sup>	0.400	5.6	0.22	Printer (idle) <sup>S</sup>	0.036	0.5	0.02
<i>Refrigerator &amp; Freezer</i>				Printer (power saving function activated) <sup>S</sup>	0.022	0.3	0.01
Refrigerator (1 door manual) <sup>T</sup>	0.075	1.1	0.04	Printer (switched off at machine) <sup>S</sup>	0.000	0.0	0.00
Refrigerator (2 door auto defrost) <sup>T</sup>	0.200	2.8	0.11	<i>Lighting</i>			
Refrigerator (2 door frost free) <sup>T</sup>	0.230	3.2	0.13	*20 watt compact fluorescent	0.020	0.3	0.01
Chest Freezer <sup>T</sup>	0.100	1.4	0.06	*65 watt quartz halogen	0.065	0.9	0.04
<i>Cooking</i>				*100 watt incandescent	0.100	1.4	0.06
Electric Stove (small element)	1.250	17.5	0.69	Fluorescent tubes (T12-40W)	0.049	0.7	0.03
Electric Stove (large element)	1.800	25.2	0.99	Fluorescent tubes (T8-36W)	0.045	0.6	0.02
Electric Stove (grill)	1.800	25.2	0.99	<i>Other (inc. laundry)</i>			
Electric Stove (oven) <sup>T</sup>	1.100	15.4	0.61	Washing Machine	0.900	12.6	0.50
Microwave	0.800	11.2	0.44	Clothes drier	2.500	35.1	1.38
Kettle	2.400	33.6	1.32	Steam Iron	1.000	14.0	0.55
Toaster	1.500	21.0	0.83	Pool pump	1.000	14.0	0.55

T: Thermostatically controlled, duty cycle included      S: Start up wattage not included      \*: These three bulbs produce equal lighting  
 Hot water heater details based on daily usage of 200lts

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