



# Anglican Carbon Emissions Reduction Project

*Caring for Creation. Saving Energy*

SA-006

## Home Energy Assessment Worksheet

Address of Home:

Name of Owner:

No. of People Normally Resident:

Phone Number:

E-Mail Address of Owner:

Date of Assessment:

Name of Assessor:

External Check - Roof	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
1) Is the roof light coloured?					Houses with light coloured roofs are 3C cooler than houses with dark coloured roofs. See <a href="http://www.consumerenergycenter.org/coolroof/">http://www.consumerenergycenter.org/coolroof/</a>	20) Make minor changes to keep heat in/out to avoid the need for air conditioning	
2) Are there Whirligigs Installed on the Roof?					Whirligigs help extract hot air from the ceiling cavity and can help reduce the temperature within the home during summer.	20) Make minor changes to keep heat in/out to avoid the need for air conditioning	
3) Does the home have Solar PV Panels Installed?			-25		It is now reasonably cheap for home owners to generate their own energy from the sun by installing a solar PV system. There is a generous government support program available. Increasing electricity prices mean that the panels will pay for themselves within a few years.		
4) If the response to question 3 is No, is there a suitable north-facing or west-facing roof for solar PV?					Ideal locations for solar pav panels are north-facing roofs which aren't impacting by shading from trees or buildings to the north at any time of the year. West-facing roofs can also be suitable. A 1kW system will need about 4m x 2m of roof space. See <a href="http://www.yourhome.gov.au/technical/fs67.html">http://www.yourhome.gov.au/technical/fs67.html</a>	24) Install 1kw of solar panels on the roof to generate electricity	

External Check - Swimming Pool	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
5) Does the home have a Swimming Pool?			30		Swimming pool pumps can account for a very large percentage of a home's electricity consumption. Refer to <a href="http://www.consumerenergycenter.org/home/outside/pools_spas.html">http://www.consumerenergycenter.org/home/outside/pools_spas.html</a>		
6) If Yes, is the pool pump timed for 4 hours/day in summer and 2 hours/day in winter?					This is the amount of time that is considered reasonable to keep the pool clean. If the pool becomes cloudy, then the time can be increased.	3) Adjust Timer on Pool Pump	
7) If the response to question 5 is Yes, is a pool blanket used?			-3		Pool blankets not only save water lost to evaporation, they keep the pool warmer, reducing the need for electricity for heating (if installed) or filtration for cleaning.	16) Install Pool Blanket to reduce water and energy use	

External Check - Shading	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
8) Are Eastern and Western windows shaded?					Shading of Eastern and Western windows from low angle early morning and late afternoon is usually best achieved through some form of vertical shading such as shrubs or vertical screens or louvres.	25) Install Ceiling Insulation & Externally Shade Windows	
9) Are Northern windows shaded?					Shading above northern windows generally needs to extend to the north away from the house in order to ensure shading throughout the day.	25) Install Ceiling Insulation & Externally Shade Windows	
10) Can shading on Northern side be removed in winter?					Shading of northern windows needs to be variable, with maximum shade provided in summer to protect from heat, and minimal, or no shade in winter to allow the low-angle winter sun to penetrate. Pergolas with deciduous vines, or solar pergolas are ideal.	25) Install Ceiling Insulation & Externally Shade Windows	
11) Is there potential for reflected heat from surroundings?					While windows might be shaded, significant amounts of heat can be reflected off surrounding buildings, particularly zincalume roofs. Some form of screening may be necessary to avoid this.	25) Install Ceiling Insulation & Externally Shade Windows	

External Check - Hot Water System	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
12) What is the type of solar hot water system used?					Hot Water Systems account for 25% of the electricity use in the typical home with an enormous difference between the energy consumed by different systems: <a href="http://www.yourhome.gov.au/technical/fs65.html">http://www.yourhome.gov.au/technical/fs65.html</a>	23) Install Solar Hot Water Heater	
<i>a) Solar without a booster;</i>					Best option, though will mean that you'll only get a warm shower from mid-morning until evening, and may miss out on cloudy days.		
<i>b) Solar hot water system with gas booster;</i>			1.5		This system produces by far the least greenhouse gas emissions.		
<i>c) Solar hot water system with electric booster;</i>			4.5		The electric booster will result in more energy use, particularly in cold areas. However this is still the second best alternative for all but large households.		
<i>d) Gas Instantaneous hot water system;</i>			5		These can be good options, particularly for households with small number of occupants, as only the amount of water that is needed is heated.		
<i>e) Gas storage hot water system;</i>			5.5		This can be an expensive option, particularly where bottled gas is used. Strong consideration should be given to switching to solar.		
<i>f) Heat pump hot water system;</i>			7		This is simply an electric storage hot water system that uses latent heat in the air to help heat the water, thereby saving about 56% of the electricity of a typical electric storage hot water system.		
<i>g) Electric instantaneous hot water system</i>			14		The second worst performer. Strong consideration should be given to converting to solar for all but small households.	23) Install Solar Hot Water Heater	
<i>h) Electric storage hot water system;</i>			16		This is by far the most expensive way of producing hot water and produces the most greenhouse gases. Household with this style of system should urgently consider switching to solar. The Federal Government is offering a \$1600 rebate to switch to solar. See <a href="http://www.environment.gov.au/energyefficiency/solarhotwater/index.html">http://www.environment.gov.au/energyefficiency/solarhotwater/index.html</a>	23) Install Solar Hot Water Heater	
13) If the system is not solar, and is storage, is the thermostat set to 60C?					Storage hot water systems should not be set below 60C as this could encourage the growth of bacteria. For advice on how to set the thermostat see <a href="http://www.rockingham.wa.gov.au/pdf/Health_and_Environment/saving-energy/lower-hot-water-thermostat.pdf">http://www.rockingham.wa.gov.au/pdf/Health_and_Environment/saving-energy/lower-hot-water-thermostat.pdf</a>	10) Adjust Thermostat on HWS	
14) If the system is gas instantaneous, is the thermostat set to 50C or less?						10) Adjust Thermostat on HWS	

External - Garden	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
15) How would you best describe the garden:					Water used on the garden represents about 50% of the water use for the average household. For a house with a large, non-waterwise garden, it could be much higher than this. Large amounts of electricity are used by the Water Corporation to deliver water to your home. So saving water also saves electricity! You can reduce water used in the garden by using waterwise plants or by installing waterwise irrigation.		
a) No Garden							
b) Courtyard Garden				1			
c) Waterwise Garden (no lawn)				3			
d) Mixed - partly waterwise				5			
e) Large Garden including lawn				7		22) Replace lawn with alternative	

External Check - Other	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
16) Are clothes routinely dried on a clothes line?					Clothes dryers use large amounts of electricity. Why not use the free energy from the sun to do the work for you?	6) Dry Clothes on Clothes Line	
17) Do external lights have sensors fitted?					Using sensors reduces the potential for lights being left on unintentionally. They also provide a security element.		
18) Is there a bar fridge?				3	One fridge should be sufficient for all but the largest households. If you have a second fridge to keep drinks cool for parties, only turn it on just before the party.	5) Switch on Second Fridge Only When Needed	
19) Are external doors fitted with adequate weather and draft seals?						20) Make minor changes to keep heat in/out to avoid A/C	

Internal - Ceiling Insulation	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
20) Is the home fitted with ceiling insulation?					Good quality ceiling insulation can reduce the temperature inside a house by up to 10C. The Federal Government has a generous rebate of \$1,200 on insulation for home owners, landlords and tenants which means that for many homes insulation can be installed for free! See <a href="http://www.environment.gov.au/energyefficiency/insulation/">http://www.environment.gov.au/energyefficiency/insulation/</a>	24) Install Ceiling Insulation & Externally Shade Windows	
21) Is the insulation in good condition?					Ceiling insulation with gaps or that has deteriorated can be largely ineffective.	24) Install Ceiling Insulation & Externally Shade Windows	

Internal - Lighting General	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
22) What is the overall style of lighting used in the home:					Refer to <a href="http://www.yourhome.gov.au/technical/fs63.html">http://www.yourhome.gov.au/technical/fs63.html</a>		
a) All light fittings compact fluorescent or LED				1	Compact fluorescent lights use about 80% less electricity to produce the same amount of light as an incandescent light.		
b) Most light fittings are compact fluorescent with some incandescent				2			
c) Fluorescent tubes and some halogen downlights				3	Halogen downlights are the worst form of lighting. Each light normally is rated at 50watt and many rooms with downlights would have four or more lights. So it soon adds up. The good news is that there are great direct low energy replacements for downlights.	17) Replace 10 Halogen or Incandescent Lights with Compact Fluorescents	
d) Many halogen downlights and incandescent lights				5			
23) Is good use made of natural light to avoid the need for artificial lighting during the day?					Skylights or using window treatments that are visually permeable can reduce the need to artificially light the home during the day without impacting on the thermal performance.	1) Turn lights off when leaving the room and use natural light	

Internal - Heating/Cooling General	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
24) How is the house cooled in general?					An increasing amount of the electricity used in the home is due to heating and cooling, particularly due to an increase in the use of air conditioning and poor house design. In addition to installing ceiling insulation, shading windows and using window treatments, the use of breezes to help cool the home, can eliminate the need for air conditioning. Visit <a href="http://www.yourhome.gov.au/technical/fs62.html">http://www.yourhome.gov.au/technical/fs62.html</a>		
<i>a) No cooling other than breezes, opening house up etc.</i>							
<i>b) Fans only</i>			2				
<i>c) Evaporative cooling with ceiling insulation</i>			3				
<i>d) Evaporative cooling, with no ceiling insulation</i>			4				
<i>e) Refrigerative air conditioner with ceiling insulation</i>			5				
<i>f) Refrigerative air conditioner with no ceiling insulation</i>			7				
25) How is the house heated in general?							
<i>a) No heating - or wood fired heater</i>							
<i>b) Gas heating with ceiling insulation</i>			2				
<i>c) Gas heating with no ceiling insulation</i>			3				
<i>d) Electric heating with ceiling insulation</i>			3				
<i>e) Electric heating with no ceiling insulation</i>			5				
26) If the house has air conditioning, is it set to 26C in summer and 18C in winter?					If you do have an air conditioner, and have tried all of the above to avoid using it, then setting the thermostat at the right setting can make a big difference to your air conditioning bill.	13) Uses Breezes and Fans to Avoid the Need for Air Conditioning	

Internal - Bathrooms	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
27) What type of shower heads are used in the home:					Old fashioned shower heads can use as much as 15 litres of water per minute or more. When you consider that 70% of the water used in the shower is heated, then reducing the amount of water you use in the shower can drastically reduce your water heating costs. There are now many shower heads on the market that use 7.5litres per minute or less and still give you a great feeling shower. A great Aussie showerhead uses 5.5 litres per minute and is available at <a href="http://www.perfectlow.com.au">http://www.perfectlow.com.au</a> for \$25.	12) Reduce Shower Flow to 9 litres per Minute or Less	
<i>a) Low flow shower heads</i>			1				
<i>b) Older, higher flow shower heads</i>			2				
28) Are flow restrictors used on other taps?							
29) Is showering time limited to 4 minutes or less?					There are great products available today that help you save water by making it easy to shut off the flow of water while you lather up without losing the correct temperature setting (where hot and cold taps are separate).	4) Reduce Shower Time to 4 Minutes or Less	
30) Are the bathrooms adequately ventilated to reduce the need for extractor fans?							

Internal - Laundry	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
31) What best describes the way in which clothes and other items are washed and dried in this household:					Not only will drying your clothes on the clothes line save you money, it will also save your clothes. Clothes dryers result in rapid deterioration of your clothes. If you're worried about bleaching of your clothes from the sun, then hang them inside out, or in the shade.		
a) Hand washed							
b) Water efficient washing machine, cold wash			1				
c) Older, inefficient washing machine or warm wash			2			8) Wash clothes in cold water 9 out of 10 times	
32) Are clothes dried in a clothes dryer rather than on a line?			2			6) Dry Clothes on Clothes Line	

Internal - Cooking	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
33) What is the predominant way in which cooking is done:					Electric stoves and ovens are very inefficient forms of cooking. Gas cooktops are very effective, and the new induction cooktops are very good as well as all of the heat goes into heating the cooking utensil, thereby reducing wasted heat.		
a) Mainly gas stove top and microwave or gas oven			1				
b) Gas stove top and electric oven			2				
c) Electric induction stove top and microwave or electric oven			2				
d) Electric stove top and electric oven			3			11) Reduce Energy Use for Cooking	

Internal - Refrigeration	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
34) What best describes the situation with the fridge/freezer					Understocked fridges are hard to maintain an even temperature as they mostly contain just air which escapes whenever the door is opened. This means that the fridge needs to work harder. Conversely, a fridge that is overstocked also has to work much harder. So try to aim to have the fridge well stocked, with not much empty space, but also no piling of products on top of each other.		
a) Small or bar fridge only			3				
b) Large, energy efficient fridge			5		If your fridge is more than 10 years old then it may be time to consider a change. New fridges use about half of the energy of older fridges. You can search for energy efficient fridges by going to <a href="http://www.energyrating.gov.au">http://www.energyrating.gov.au</a>	21) Replace 10 Year Old Fridge	
c) Large, older inefficient fridge			7				
35) Is the refrigerator well stocked (neither too full nor too empty)?					Understocked fridges are hard to maintain an even temperature as they mostly contain just air which escapes whenever the door is opened. This means that the fridge needs to work harder. Conversely, a fridge that is overstocked also has to work much harder. So try to aim to have the fridge well stocked, with not much empty space, but also no piling of products on top of each other.		
36) Are the seals on the refrigerator(s) in good condition?					Seals in poor condition can mean that the fridge has to work much harder. Seals are relatively cheap and easy to replace.		
37) Is there adequate ventilation around the fridge?					If a fridge is poorly ventilated, there can be a build up of warm air around it which means that it has to work much harder to keep the inside of the fridge cool.		

Internal - Bedrooms	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
38) Are bedrooms mainly located on the cooler south side of the house?					As bedrooms are used for sleeping in, it is less important that they are cold in winter, and more important that living areas are warmer by being placed on the north side of the building. You will just have to put on an extra blanket. Conversely, by being on the south side, the bedrooms will be cooler and more comfortable for sleeping in summer.		

Internal - Study/Office	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
39) Are computers and other appliances (e.g. Printers) switched off when not in use;					The electricity that appliances are used when they are not being used and are switched off, but not switched off at the wall is known as standby power. Many devices such as TVs, computers, printers, telephones and even fans use standby power, and standby power can represent 10% or more of a household's electricity use.	7) Switch Off All Standby Appliances at Wall	
40) Is it easy to switch off appliances at the wall to avoid standby power?					Make it easy to avoid standby power by using a power board, with a switch that is within easy reach.		
41) Is the study/office located on the North side of the building to maximise comfort during winter?					In order to minimise winter heating costs, the home study/office should be located on the northern side of the building to allow low angle winter sun to penetrate the room. If this is not the case, is it possible to rearrange the allocation of space within the house?		

Internal - Living Room	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
42) Are TVs and other entertainment appliances switched off when not in use?					The electricity that appliances are used when they are not being used and are switched off, but not switched off at the wall is known as standby power. Many devices such as TVs, computers, printers, telephones and even fans use standby power, and standby power can represent 10% or more of a household's electricity use.	7) Switch Off All Standby Appliances at Wall	
43) Is it easy to switch off appliances at the wall to avoid standby power?					Make it easy to avoid standby power by using a power board, with a switch that is within easy reach.		
44) Is the living room located on the North side of the building to maximise comfort during winter?					In order to minimise winter heating costs, the living room should be located on the northern side of the building to allow low angle winter sun to penetrate the room. If this is not the case, is it possible to rearrange the allocation of space within the house?		

Internal - Window Treatments	Yes/No	Notes	Yes Score	Your Score	Why Important / Reference / Potential Solutions	On-Line Pledge?	X = Recommend
45) Are suitable window treatments used to minimise heat transfer between the outside of the house and the inside?					The best form of window covering is heavy curtains with enclosed pelmets. This can reduce 50% of the incoming heat.	19) Use Window Treatments to Minimise Heat Loss/Gain	

