FINAL REPORT
for the
SEDO GRANTS PROGRAM

Fostering Sustainable Energy Practices in Homes

Southern Metropolitan Regional Council (SMRC)

Government of **Western Australia**
Office of **Energy**

SOUTHERN **METROPOLITAN REGIONAL** COUNCIL

'Fostering Sustainable Energy Practices in Homes' project is supported by the State Government's Office of Energy and implemented by the Southern Metropolitan Regional Council in collaboration with the Cities of Canning, Cockburn, Fremantle and Rockingham Towns of East Fremantle and Kwinana.

EXECUTIVE SUMMARY

AIM

To improve energy efficiency practices and the use of sustainable energy products in households of the SMRC community region.

MAJOR ACTIVITIES UNDERTAKEN

1. Develop and mail out invitation cards
2. Contact participants to determine further information to be sent out and/or if interested in a home energy audit
3. Collate participant responses
4. Purchase equipment for home visits and energy audits
5. Appoint and train energy auditors
6. Phone households who registered interest in a home energy audit
7. Deploying energy auditors for home energy audits:
    i. Identify the preferred actions of the households
    ii. Conduct walk-through home energy audit to assess the scope of opportunity for energy efficiency improvement
8. Facilitate households to take action through:
    i. Information
    ii. on-hand demonstration
    iii. coordination with suppliers
    iv. follow-up contact/phone calls to commend action already taken, encourage action not already taken, and offer the provision of further information and advice
9. Award winners who undertook the most action
10. Evaluate the project

MAJOR OUTCOMES ACHIEVED

- 196 home energy audits completed
- 94.2% found the home energy audit to be somewhat useful to very useful
- 72.5% of audited participants made the changes suggested in the audit
- 56.7% of participants are likely top make some of the recommended changes in future (with 14.2% stating that 'maybe' they would make some of the recommended changes in future)
- GHG savings
    Total actual savings: 335.93 tCO2-e/yr
    Total anticipated savings: 563.88 tCO2-e/yr

PROJECT BACKGROUND

PROJECT METHODOLOGY and PURPOSE

Climatewise is a collaborative initiative between the SMRC member councils[1] and the SMRC to help the community respond to climate change. Projects focus on households, small to medium sized businesses and light industries to provide advice to reduce energy use, water use and improve waste recycling through sustainable and innovative practices and technology. In this vein, this project focuses specifically on households and the effective reduction of energy use through energy efficiency measures – both behavioural and technological through the uptake of sustainable energy products e.g. solar PV systems, solar hot water systems, awnings etc.

Specifically this project applied a combination of two methodologies; the Enterprise Facilitation Model[2] and the Individualised Marketing Tool[3]. The SMRC has significant experience in delivering both the models and it was believed that a combination of both would help households take action. Enterprise Facilitation® is a "social technology that is recognized as a viable complement to conventional top down economic development strategies"[4]. It is an approach based on facilitating the enterprising nature of members of the community through nurturing the "passion, entrepreneurship, innovation, creativity and fundamental needs"[5] of the people every community in their quest to transform their talents and vision in to good work. The Individualised Marketing Tool or IndiMark® "is an innovative marketing approach targeted at increasing the use of environmentally friendly modes in an area in a fast and cost efficient way"[6].

PROJECT OBJECTIVES

To assist 750 households in the SMRC region[7] to improve their energy efficiency and to increase their use of sustainable energy products through facilitating home energy actions and offering free walk-through home energy audits.

KEY PERSONNEL INVOLVED

SMRC Staff

- Anis Zaman – Regional Greenhouse Coordinator
- Stephanie Jennings – Greenhouse Strategic Researcher
- Venetia Roberts – Green Enterprise Facilitator

SMRC contracted Home Energy Assessors

- Chiara Pacifici
- Gerhard Wicke
- Tim MacCallum
- Karl Ross

All assessors are 2009 post graduate degree students in Building and Energy Efficiency at Murdoch University in Western Australia. Many are also actively involved in the professional energy efficiency sector.

SMRC contracted Telecommunications company

- Advantage Communications and Marketing

[1] Cities of Canning, Cockburn, Fremantle and Rockingham and the Towns of East Fremantle and Kwinana
[2] See http://www.sirolli.co.uk
[3] See http://www.socialdata.de/leistungen/marke.php
[4] See http://www.sirolli.co.uk
[5] See http://www.sirolli.co.uk
[6] See http://www.socialdata.de/leistungen/marke.php
[7] Includes the Cities of Canning, Cockburn, Fremantle and Rockingham, and Towns of East Fremantle and Kwinana.

PROJECT IMPLEMENTATION

The project aimed to engage 750 households that were initially approached under the ClimateActions project[8] undertaken by the SMRC in 2007-08 and supported by the Australian Government's Department of Environment, Water, Heritage and the Arts[9]. In reality, approximately 590 households were reached with the initial invitation cards as some of the contact's home addresses and phone numbers were invalid. Previous experience from an SMRC, SEDO funded project (EnergyActions) and the business engagement component of the ClimateActions project strongly suggested that households need facilitation to help them take actions. Face-to-face contact and facilitation can significantly increase the chance of making a change[10]. This project aimed to improve participants home energy efficiency through providing home energy audits partnered with energy efficiency and renewable energy information.

This project followed the successful model of Enterprise Facilitation as implemented in the ClimateActions project to help households achieve better energy efficiency and take-up of renewable energy technologies. SMRC facilitators and hired energy professionals trained by the SMRC visited households, assessed the scope of energy efficiency improvement opportunity, identified the areas of concern and helped the householders take action. As a result of a previous SMRC project[11] it was estimated that about 38% of the households would be interested in the home energy assessment. In this project we had approximately 48% (283 out of the 590 contacted) of households interested in a home energy audit.

Components of the project implementation:

Invitation phase
To personally contact the 750 households already in the ClimateActions database.

1. Develop and mail out invitation cards

Invitation cards developed by the SMRC and approved by SEDO were printed and sent out to approximately 590 households. A letter from the SMRC accompanying the invitation card was sent in the envelope to explain that this project was a continuation of support from the earlier EnergyActions project that the householder had previously been involved in. (see Appendix A for samples of each document)

2. Project launching

Project launching was done through media releases in five local newspapers. Copies of the media stories are enclosed.

Scheduling phase
A service delivery schedule was set up by phoning each individual household.

3. Contact participants to determine further information to be sent out and/or if interested in a home energy audit

The telemarketing company Advantage Communications were utilised to make the phone calls to the households who received the invitation cards. A phone script drafted by the SMRC was used by the telemarketers to direct the questions asked to the householders during the calls. (see Appendix B for sample script used)

Table 1: summary of the results from the telemarketers' phone calls undertaken throughout the project engagement phase from April to September 2009

[8] http://www.climatewise.net.au/ca.htm
[9] Approval to use the database of 750 households of the ClimateActions project was obtained from the Department
[10] Under the ClimateActions program, about 80% of the businesses who received facilitation took actions.
[11] Ref: EnergyActions project

	#	%
Total phoned:	582	
Successful contacts	392	67%
Positive responses[1]	361	92%
Home energy audit request	283	72%
Request for information (e.g. action flyers)	78	20%

[1] *Includes request for energy audit, request for information flyer, etc.*

4. Collate participant responses

The responses from the phone calls made by the telemarketers to households were collated. From here, it could be seen which households required further contact to schedule an energy audit and which households to send out the requested action flyers to (the households were asked to specify which action flyers were required). The aforementioned action flyers were developed by the SMRC and approved by SEDO. (see Appendix C for samples of the action flyers sent)

5. Purchase equipment for home visits and energy audits

The equipment purchased to aid energy audits included:

Water saving showerhead	4 items	For demonstration purposes
Compact fluorescent lamp	8 items	For demonstration purposes
Pipe insulation	32 meters	To be used (administered on-site) to help households requiring insulation on their exposed hot water pipes (for storage systems only)
Insulation tape	4 rolls	
Timer	4 items	For demonstration purpose

6. Appoint and train energy auditors

SMRC recruited four auditors on a contract basis to conduct the home energy audits. The auditors possessed good experience and educational background in energy efficiency. Furthermore, they were trained by the SMRC in a training workshop, which included the following:

- Concepts of home energy audits,
- Engagement/conversation techniques,
- Things to look for during energy audits,
- Descriptions of Solar Photovoltaic systems, green power and solar hot water system etc., and
- How to report back to the SMRC about the findings of an audit and the data collected.

The auditors were trained before they were sent out for audits. Each auditor was given an audit manual in order to maintain consistency and quality. (see Appendix D for Auditor's Manual sample)

7. Phone households who registered interest in a home energy audit

The contracted auditors phoned the households who expressed interest in having a home energy audit and confirmed an appointment suitable to them. A schedule of the audit appointments was therefore developed and it was continuously maintained and updated by the SMRC.

Service Delivery Phase

Energy expert facilitators visited households according to the schedule. A follow-up phone call will be made to check on the progress at a later date. Households who opt for a home energy audit will be given a report detailing the current energy status and suggested actions to improve energy efficiency.

8. Deploying energy auditors for home energy audits:

i. Identify the preferred actions of the households

This was achieved in the initial conversation at the commencement of the visit. The auditor conversed with the householder about the level of effort and energy efficiency consciousness they already pursue, and from there, what actions they are interested in taking or what they would like to achieve (if any). In many circumstances, the householder looked totally to the assessor to make all the necessary suggestions to get them started on their improved energy efficiency, and therefore greenhouse gas abatement, path. Conversely, in some circumstances the householder was already very active in the energy efficiency realm and was looking to the assessor for more specific advice (e.g. relating to the orientation of their already installed PV array) and for confirmation that they were already making the correct efforts.

ii. Conduct walk-through home energy audit to assess the scope of opportunity for energy efficiency improvement

The auditors were armed with a questionnaire that directed the progress of the audit and prompted the collection and assessment of various energy saving opportunities within the home. Wherever possible, the households were assisted to take on-the-spot actions e.g. changing light globes, adjusting hot water thermostat, signing up for Green Power, etc. Where the household expressed interest in renewable energy technologies, the facilitator assisted the householder to understand the technologies and encourage their uptake. For actions that require a licensed professional or a supplier, the SMRC provided a supplier list to enable householders to organise a quote and/or site visit. In each case, there was a carbon copy of the original questionnaire left with the households for their future reference and use.

The auditors visited the households with assessment materials that included:

- An audit questionnaire (see Appendix E for sample audit questionnaire),
- Large number of flyers that had been previously developed,
- Information on sourcing solar hot water systems and solar PV systems (see Appendix F for sample supplier lists for PV and solar HWS's), and
- Demonstration items – a piece of pipe insulation, energy efficient globes, energy efficient downlights, compass, timer for drink fridges and water saving showerhead.

9. Facilitate households to take action through:

i. Information e.g. flyers and the expertise of the auditors

ii. on-hand demonstration e.g. utilising the demonstration items

iii. coordination with suppliers e.g. the supplied supplier lists

iv. follow-up contact/phone calls to commend action already taken, encourage action not already taken, and offer the provision of further information and advice (see Appendix G for the script provided to the telemarketers for the follow-up phone calls and the resulting database of responses)

Confirmation phase:

10. Award winners who undertook the most action

The households who achieved the highest energy saving (and/or renewable energy uptake) and who took the most energy saving actions by the end of the project will be awarded. Awards will be in the form of cash vouchers to buy sustainable energy products.

Evaluation phase

11. Evaluate the project

Energy reductions and greenhouse gas emission reductions will be calculated from the specific actions taken by the households. This evaluation quantifies the efforts made throughout the duration of the project and therefore the success of the project.

OUTCOMES OF THE DESCRIBED PROJECT ACTIVITIES

- Energy (electricity and gas) use reduction
- GHG emission reduction
- Increased awareness if sustainable energy and energy efficiency technologies in the community
- Increased community uptake of renewable energy and energy efficiency technologies

PROJECT OUTCOMES

Community Awareness

Community awareness was increased through:

- The recommendations made to the householders about the courses of action relevant to their particular situation (i.e. house and living arrangements) in order to live more sustainably, reduce greenhouse gas emissions and reduce fossil fuel energy use. Some of the recommendation made over the course of the project are as follows:
    - Suitability of roof orientation to consider the installation of a solar Photovoltaic array to self-generate electricity for the home
    - Potential switch to GreenPower electricity supply (allows consumers to dictate the percentage of electricity in the grid that is generated from clean, renewable energy sources)
    - Installation of new, or upgrade of existing, insulation in the home
    - Replacement of incandescent globes with compact fluorescent lamps (CFLs. An estimated 80% energy saving can be made through replacing a standard incandescent bulb with a CFL of equivalent luminance, and the CFLs last much longer.
    - Replacement of standard 50W halogen downlights with 35W energy saver halogen downlights. The energy savers are 30% more efficient and last 2½ times longer.
    - Lowering the thermostat of gas instantaneous hot water systems
    - Suitability of the property to install a solar hot water system
    - Shading of east-west and north facing windows, a passive solar design mechanism
    - The installation of water efficient showerheads in bathrooms
    - Reduction in the number of refrigerators in a house
    - Energy efficient upgrade of refrigeration in a house
    - Replacement of seals in existing fridge/freezers of a house
    - Reduction in the use of standby power i.e. turning off all appliances on standby mode
- Personal contact with participants and information dissemination
    - This personal contact and education of members of the community encourages behavioural change within a household and further, as those who have been involved seek to discuss the details of what they have learnt and achieved and educate their friends and family

- Media announcements in the local newspaper of project commencement and completion. This extended the awareness to a wider community beyond those who participated.
- Project information hosted on the SMRC website to allow visitors to see the project progress and outcomes
- Project updates and figures shared with the environmental and sustainability officers of the SMRC member councils. Some of the councils in turn then further reported on the progress of the project through their local media streams i.e. local newspapers.
- A presentation to a national level conference to disseminate project information to the professionals who would likely help with project replication – an abstract was sent to the Enviro 2010 conference in November 2009. The decision on whether we have been invited to do a presentation at the conference will be communicated in February 2010

In all of the above points, the methodology used to evaluate this outcome was the response received from the participants after their involvement in the project. The follow-up phone calls were very detailed and allowed for participants to communicate their thoughts on the project, both positive and negative. This compiled database of participant responses has allowed a final stage project evaluation on the success of the model. Considering that we received an overwhelming majority of positive responses to the experience of participants, we believe that the community we targeted was engaged and involved successfully. Furthermore, in some cases we were contacted by those in the community not targeted, either as friends or acquaintances of participants, and members of the community who found out about the project through other channels of communication. In future we hope that these other channels will improve in effect, therefore highlighting the room for improvement in this facet of the project approach.

Audience Participation

Number of direct participants – 590 households (there were often many inhabitants of each household so the actual number of individuals contacted is likely to be much greater than 590)

- Benefitted from the assistance and guidance relating to sustainable energy practices and the use of sustainable energy products
- These participants in turn also alerted friends and acquaintances to the details and benefits of the project. Through information sharing and recommendations we were contacted by some of these people seeking to be involved themselves.

An extra 50-200 people are expected to be in the audience of the presentation relating to the project at the Enviro2010 conference, should SMRC be invited to present our findings.

In addition, a high number of people are targeted through announcements in local newspapers and on the SMRC website. This number is difficult to estimate.

Greenhouse Gas Emission Reductions

The table below shows the calculations used to ascertain the greenhouse gas emissions savings resulting from the actions of the project. The main summary figures are the actual greenhouse gas emissions saving and the anticipated greenhouse gas emission saving:

Total actual savings: 335.93 tCO_2-e/yr

Total anticipated savings: 563.88 tCO_2-e/yr

The actual saving figure represents the savings from the actions that were taken by participants over the course of the project i.e. from the home energy audit date until the final follow-up phone call was made to the individual households. The anticipated saving figure represents the savings from the actions participants have indicated they intend to make in the near future. These actions were ascertained form the follow-up phone calls made to participants some weeks after the audits were performed. (see details in the conclusion section of this report)

Table 2: Calculations from the results of the follow-up phone calls made to home energy audited households

Results from follow-up calls to audited households							
Action taken in each area:			Households audited and contacted for feed-back		Total no. of households audited		
Q no:	Type of action or feed-back	associated CW saving figure per household	no:	%	no:	%	associated energy saving tCO2-e/yr
Q2	answered 'yes' to made or in process of making recommended changes		95	69.34	135.91	69.34	
Q2i a	insulation?	0.44 tCO2-e/yr	20	21.05	41.26	21.05	18.16
Q2i b	Renewables/PV?	2.55 tCO2-e/yr	9.5	10.00	19.60	10.00	49.98
Q2i c	lighting?	0.6 tCO2-e/yr	76	80.00	156.80	80.00	94.08
Q2i d	solar HWS?	3.5 tCO2-e/yr	3	3.16	6.19	3.16	21.66
Q2i e	shading?	1.24 tCO2-e/yr	24	25.26	49.52	25.26	61.40
Q2i f	water saving	1.0 tCO2-e/yr	22	23.16	45.39	23.16	45.39
Q2i g	refrigeration?	0.37 tCO2-e/yr	12	12.63	24.76	12.63	9.16
Q2i h	standby?	0.25 tCO2-e/yr	70	73.68	144.42	73.68	36.11
					Total actual savings:		335.93
Q3	any other changes likely to be made in future?	yes	68	56.67	111.07	70.83	
		maybe	17	14.17	27.77		
		total:	85	70.83	138.83	70.83	
Q3i a	insulation?	0.44 tCO2-e/yr	11	12.94	25.36	12.94	11.16
Q3i b	Renewables/PV?	2.55 tCO2-e/yr	35	41.18	80.71	41.18	205.80
Q3i c	lighting?	0.6 tCO2-e/yr	4	4.71	9.22	4.71	5.53
Q3i d	solar HWS?	3.5 tCO2-e/yr	28	32.94	64.56	32.94	225.98
Q3i e	shading?	1.24 tCO2-e/yr	16	18.82	36.89	18.82	45.75
Q3i f	water saving	1.0 tCO2-e/yr	16	18.82	36.89	18.82	36.89
Q3i g	refrigeration?	0.37 tCO2-e/yr	33	38.82	76.09	38.82	28.15
Q3i h	standby?	0.25 tCO2-e/yr	8	9.41	18.45	9.41	4.61
					Total anticipated savings:		563.88
					TOTAL (actual + anticipated) SAVINGS:		**1235.75**

METHODOLOGY and ASSUMPTIONS

Both the methodology and assumptions used to calculate the greenhouse gas emissions reductions are detailed in Appendix H of this report. Here the figures will show how each action was attributed an individual average GHG emission saving which was then multiplied by the number of households who successfully took this action. See Appendix H.

Other Outcomes

- Household cost saving on energy: A household who takes all the actions specified in the project will save about $740 on their cost of energy each year. See Appendix H for estimation.
- Peak demand reduction: Energy efficiency will reduce the peak electricity demand generated from the participating household's energy demands.
    - This is attributable to the project as without the project activity and advice from auditors to the participants, this reduction would not have been achieved.
- Long term community involvement: As this project is built on the contact list of previously engaged households from a previous project, the participants have received a long term service which is absent in most of the projects of this scale. This long term approach helps with long term behavioural change.
    - From SMRC experience and through the teachings of the Enterprise Facilitation Model[12] long term contact with participants has been seen to greatly increase the productivity and activity they undertake during and after a project. For example: should the participant engage in a quote with the supplier of PV system to be installed on their property they may be reluctant to actually proceed with the installation of the system without checking the information provided by the supplier. This project approach allows the participant to ask further questions from the SMRC before agreeing to the installation. Moreover, the design and information sharing of the project facilitates the participants to be informed consumers of sustainable products for the home.
- Project model replicable to other places: This project will establish a model that looks beyond information dissemination to the community and actually helps facilitate actions being taken. This approach and method could be replicated elsewhere.
    - For example; this project has only been undertaken in the SMRC region. Therefore, there exists potential to replicate this project in other regional community areas of WA
    - There exists potential to further blanket the SMRC region i.e. targeting those households that were not on the contact list utilised from the commencement of this project
    - The project is not location specific hence the opportunity exists to replicate it anywhere as long as the appropriate facilitators are available

[12] See http://www.sirolli.co.uk

CONCLUSION

Of the 590 residents of the SMRC region targeted by this project, the following results were achieved (see Table 3):

- 196 audits performed
- 283 said yes to audits but 87 later pulled out due to reasons such as no longer available, illness and holidays
- 137 of 196 participants were contacted for feedback after the audits had taken place (120 by telemarketers and 17 by SMRC staff)

Table 3: indicators from the project

Indicators		
	Numbers	% of total
Households targeted	582	
Households successfully contacted by phone	392	67.35%
Audit requested	283	72.19%
Supplier info & flyer requested	78	19.90%
Audit performed	196	50%
Audit declined	87	22.19%

Table 4: Response from participants relating to the usefulness of the home energy audit and the information provided

	Frequency	Percent
Not Useful at all	1	0.8
Not very useful	1	0.8
Neutral	5	4.2
Somewhat useful	47	39.2
Very Useful	66	55.0
Total:	**120**	**100.0**

Table 5: Response from participants relating to the percentage who made the changes suggested in the audits

	Frequency	Percent
Yes	87	72.5
No	33	27.5
Total:	**120**	**100.0**

Those participants that answered 'yes' in the above table made changes suggested in the audits in relation to the following headings:

- 23% - installing insulation or replacing old insulation
- 8% - PV solar power system
- 82.8% - replacing downlights with energy saver halogen downlights or replacing incandescent globes with CFL's
- 2.3% - solar HWS installed or in the process of being installed

- 27.6% installing awnings or planting trees to shade windows
- 25.3% - installing water saving showerhead
- 12.6% - replacing old refrigeration system with new energy efficient model
- 75.9% - turning off all appliances in standby mode at the power point
- 18.4% - insulation of pipes

Table 6: response from participants relating to the percentage likely to make (other) recommended changes in the future:

	Frequency	Percent
Yes	68	56.7
Maybe	17	14.2
No	35	29.2
Total:	**120**	**100.0**

Those participants that answered 'yes' or 'maybe' in the above table indicated their intention to make the recommended changes in future in relation to the following headings:

- 16.9% - installing insulation or replacing old insulation
- 52.6% - PV solar power system
- 52% - replacing downlights with energy saver halogen downlights or replacing incandescent globes with CFL's
- 35.8% - solar HWS installed or in the process of being installed
- 30.3% installing awnings or planting trees to shade windows
- 33.3% - installing water saving showerhead
- 44.2% - replacing old refrigeration system with new energy efficient model
- 53.1% - turning off all appliances in standby mode at the power point
- 11.1% - insulation of pipes

MAJOR OUTCOMES ACHIEVED

- 196 home energy audits completed
- 94.2% found the home energy audit to be somewhat useful to very useful
- 72.5% of audited participants made the changes suggested in the audit
- 56.7% of participants are likely top make some of the recommended changes in future (with 14.2% stating that 'maybe' they would make some of the recommended changes in future)
- GHG savings
  Total actual savings: 335.93 tCO2-e/yr
  Total anticipated savings: 563.88 tCO2-e/yr

Appendices

Appendix A

Invitation card and accompanying note to residents

Please help us to help you to reduce your electricity bill

There are many simple ways you can reduce your electricity bill.

Your Council is offering FREE help to reduce your home electricity bill.

Would you like to have someone visit your home who can discuss how to reduce your energy use?

Would you like to install a solar photovoltaic system to generate your own electricity and need help with products & suppliers?

Would you like to install a solar hot water system and need help with products & suppliers?

Do you need help with adjusting your hot water system thermostat?

Do you want to install energy efficient lights and are not sure which ones are right for your home?

Do you need help with products & suppliers for installaing shading on your East & West windows?

We will phone you soon to discuss these opportunities

climatewise
SMRC response to climate change

This project is supported by the State Government's Sustainable Energy Development Office and implemented by the Southern Metropolitan Regional Council through a regional partnership of Cities of Canning, Cockburn, Fremantle and Rockingham and Towns of East Fremantle and Kwinana.

Dear Resident

About a year ago, you were involved in our Climate Actions program where you selected energy, water and waste brochures of interest for taking action in your home. We hope you received them by post or email and they were of use to you.

We are getting back in touch again to offer you a free extension to this program with a home energy visit, new brochures and phone support.

We will phone you within the fortnight to ask whether you are interested in taking advantage of any of these new Climate Actions service options to help you make further energy savings.

Kind regards from

ClimateWise Team at SMRCouncil

Appendix B
Telemarketer's script from initial phone calls to engage participants

ADVANTAGE
COMMUNICATIONS AND MARKETING

Southern Metropolitan Regional Council – Climate Wise Program
DRAFT SCRIPT 2/09

Mr/Ms_____? *(Name on contact list)*

Hello, this is ……. Mr/Ms _____ calling on behalf of the City/Town of _____ *(see area on contact list)* and the Southern Metropolitan Regional Council. How are you going?

Very quickly Mr/Ms_____, you may remember requesting household energy saving information last year as part of your local council's Climate Actions project... *prompt...* you would have received brochures on reducing household energy, water, waste, that sort of thing *(see contact list for details)*? ***...pause for confirmation....continue regardless***

The City/Town of _____ is now offering selected households a free in-home energy assessment by a council specialist *(looking at things like hot water choices, lighting, shading, heating and cooling)* to identify areas to help you save energy and reduce greenhouse gases and household bills. I can arrange a free energy assessment for you over the next week or so. Would that interest you? *(It will take around 1hr)*

> *If **YES**:* What day is good for you? *(preferably within the next fortnight but at least 5 days out) Make suitable appointment.*
>
> ***CONFIRM ADDRESS FOR APPOINTMENT.***
>
> Great. A Council officer will be in touch with you over the next few days to confirm the time. GO TO **ASK ALL**
>
> *If **NO**:* That's fine. We've produced a useful guide to local suppliers of things like solar electricity, solar hot water and shade structures.. and we also have additional brochures on _____ *(refer contact list and name those energy brochures not chosen previously).* Can I arrange to send you any of these? *Note which.*
>
> ***CONFIRM MAILING ADDRESS***
>
> Great. We'll post that/those out to you over the next week or so.

ASK ALL Just before I go...is there any other help or information we can assist you with to help you save energy in your home?

> If YES: *Note details and arrange for follow up by a Council Climate Actions officer.*

Thank you for your time. I hope you find the service useful.

Appendix C
Action flyers used in the project

How to Lower my Hot Water Unit Thermostat

Often hot water units come out of the factory at a setting higher then needed. So an easy way to make a big difference in your energy bill is by turning down the hot water temperature control or thermostat.

Most, though not all, systems have a thermostat you can adjust.

So, what type of hot water system do I have?

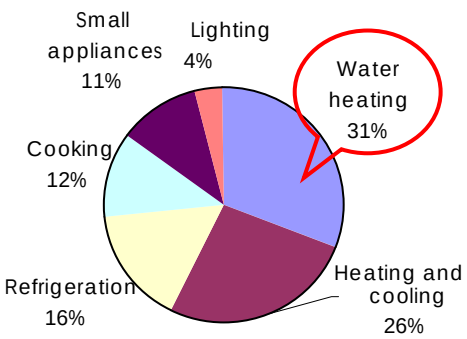
Locate your hot water system and see what it is powered by: gas, electricity or solar? You should be able to identify a gas system because it will have a gas connection. If you're unsure, call the manufacturer.

Storage systems

Storage systems are designed to hold the water after it has been heated. You can identify storage systems because they have a tank to hold the water.

Hot Water is typically the largest energy user in a WA home.

Ref: SEDO



Concerned that you won't have steamy hot showers?

Lowering the hot water thermostat doesn't mean having lukewarm showers. Your shower water will still be at a comfortable temperature to have a hot shower, while saving energy, money and greenhouse gases.

Printed on 100% recycled paper

Gas boosted solar hot water units have the lowest greenhouse emissions for all hot water unit types for Perth homes.

SOLAR HOT WATER SYSTEM

Solar hot water systems have storage tanks with either an electric or gas booster. The thermostat controlling the booster is not accessible and does not need adjusting.

Solar systems will have their thermostat preset around 60^{0}C, a necessary temperature for storage systems. Use a timer or switch to boost as needed in winter.

INSTANTANEOUS SYSTEM

Instantaneous systems are designed to heat the water only as you use it. It is generally a box mounted on a wall inside or outside your house.

Note that **electric instantaneous** systems cannot be turned down. They are big users of energy, so carefully manage your hot water consumption.

SOUTHERN METROPOLITAN REGIONAL COUNCIL

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Choosing Clean, Renewable Electricity through *GreenPower*

You can get renewable electricity for your home *without* paying thousands of dollars for your own solar power system.

All you have to do is sign up for GreenPower electricity from Synergy or another accredited supplier.

You will take a huge greenhouse step for your home by choosing renewable electricity instead of the standard residential electricity generated from coal and gas power stations.

What is GreenPower?

By choosing accredited GreenPower, you can have 25% to 100% of your household's energy use generated from renewable sources. The greenhouse pollution savings for one house are equivalent to taking between one and two cars off the road each year!

Can I Trust It Is Truly Green ?

The Green Power audit process ensures that additional GreenPower is added to the electricity grid on your behalf according to your use. See the independently audited reports at

http://www.greenpower.gov.au/our-audits-and-reports.aspx

Who Sells GreenPower to us?

WA residents can purchase GreenPower from Synergy

- **Synergy – NaturalPower phone 13 13 53**

or credits with interstate providers while retaining your billing via Synergy.

These accredited providers are:

- **Climate Friendly 1300 CLIMATE**
- **Ark Climate (03) 9682 4200**
- **GreenChoice 13 14 93**
- **COZero 1300 BE NEUTRAL**

Under Synergy's EasyGreen program you can choose a set dollar amount to be applied to each bill for the purchase of renewable energy. The selection of this 'block' of renewable energy is available from $10 to $80 in $10 dollar increments.

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How can a power source in Albany feed my home with green electricity?

A GreenPower supplier, like Synergy, purchases local or interstate renewable electricity produced from sun, wind or biomass to meet the total electricity consumption from households signed up for GreenPower. There is no change to your meter or electricity connection.

Signing up for GreenPower

To sign up just contact any of the accredited electricity providers offering green electricity to WA households on Page 1.

At the time of signing up, make sure you have a recent electricity bill handy and personal identification.

But how much would GreenPower cost me?

You can sign up to GreenPower for between $1.16 (25%) to $4.63 (100%) extra per week or **potentially nothing if you take up some energy efficiency measures in the home at the same time as signing up[1]**. You can partly offset this cost by the following:

- replacing 6 existing 75W incandescent globes with 18W CFLs plus lowering your hot water system's thermostat, or
- installing a water saving showerhead.

Note: Savings will vary depending on the type of hot water system you have. See Climate Actions flyers to help you undertake these actions. These actions will save the average household around 4 units of electricity per day or more, which eliminates the extra cost for the same household signing up to 100% GreenPower.

1. These costs are likely to change from 1 July 2009 with the increase in electricity tariff.

SOUTHERN METROPOLITAN REGIONAL COUNCIL

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How Effective is My Insulation?

Over time, insulation material in your home deteriorates and becomes less effective in cooling in summer and warming in winter.

Older insulation material will need to be upgraded or replaced. It is estimated that good insulation lasts for 20 years before it needs to be upgraded or replaced.

WHAT IS THE STANDARD FOR INSULATION?

The benefit of insulation is measured by its Thermal Resistance or '**R-value**'. Under the Building Code of Australia, all new homes in Perth, WA are required to have insulation with a minimum R-value of:

- **3.0 for all ceilings and bulkheads**
- **0-1.5 for the walls depending on the type of walls**

Home owners are encouraged to have a retrofit to meet these standards.

For more information on insulation and good house design, visit the SEDO's "Easy Guide to Insulation"[1].

WHY INSULATE MY HOME?

In a house without insulation, 35% of the heat loss takes place through the roof; 15-25% through the walls (ref: SEDO).

When correctly installed, insulation will help save money on power bills as less energy is used in home heating and cooling.

Installing insulation or upgrading the insulation in an average house may cost from $1200 but makes your home a more pleasant environment to live in and saves on heating and cooling costs.

1. http://www.sedo.energy.wa.gov.au/pdf/insulation_diagrams.pdf

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TIPS FOR GOOD INSULATION

Blown-in products settle over time, so you will need to measure thickness every 5 years to find out whether an upgrade is needed.

Batts are bonded strongly so will stay thick for a longer time, and are easy to install. Also if work needs to be done in the ceiling later on, a batt can easily be removed and replaced in its original position.

WHAT TO REMEMBER WHEN BUYING INSULATION

1. **Choose insulation according to the R-value.**
   - Choose insulation that has a higher R-value.
   - Different insulation materials with the same R-value will perform just as effectively. For example, batts with an R–3.0, will perform exactly the same as loose fill with an R-3.0.
2. **Get multiple quotes from suppliers**
   - Get multiple quotes to ensure good value.
   - You can also ask for a relevant certification for the type of insulation that you are interested in.
   - The insulation should be certified in writing by the supplier as being to Australian Standard AS 3999.
3. **Keep in mind the hot box syndrome**
   - Shade East and West-facing windows with adjustable awnings, deciduous trees or a pergola and the North with eaves to block summer sun.
   - Unshaded windows build up heat inside the home and the insulation keeps the heat inside, resulting in an oven effect.
4. **Fire Protection**
   - Insulation materials should be either non combustible or fire proof.

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High Efficiency Lighting Choices

Put aside your incandescent globes and consider some energy saving alternatives. What are they?

Halogen downlights have become a popular choice but should be avoided if you are looking for an energy efficient solution for space lighting.

New generation compact fluorescent lamps (CFLs) come in a wide range of sizes to fit into small lights or ceiling recesses and can also now provide a warm light colour.

AVOIDING DOWNLIGHTS

If you are considering halogen downlights for a living space, think again as this could substantially increase your lighting costs. Your heating costs may also rise as installing downlights can cause gaps in ceiling insulation.

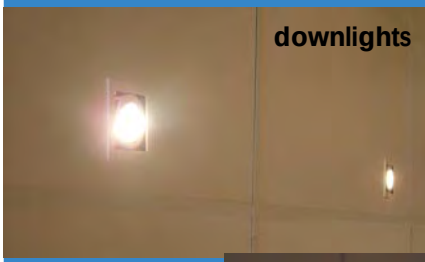
You may also have unsatisfactory lighting patterns as halogen downlights provide bright pools of light rather than general illumination.

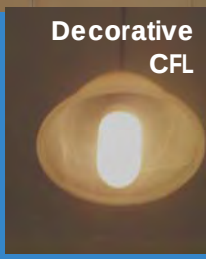
IF YOU ALREADY HAVE DOWNLIGHTS...

- ☼ Ask for 35W halogen downlights with the same light output as a standard 50W
- ☼ Use the dimmer
- ☼ Keep an eye out for LED and micro-CFL technology for a direct replacement or consider rewiring

Low voltage does not mean low power use.

Some houses may now have more than 100 downlights. This can result in lighting energy use of 3 to 4 times greater than traditional fluorescent tubes or incandescent globes.





Compact fluorescents have a lifetime of 8,000 to 10,000 hours, while halogen downlights last for up to 2,000 hours.

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Consider 'task lighting' with fluorescent tubes

Compact Fluorescent Lamps now come in a range of sizes and shapes to size different rooms

Tips for choosing a good compact fluorescent light:

- ✓ **'Warm white' colour**
- ✓ **Curly style to get good light distribution**
- ✓ **Look for longer life and a reputable supplier**
- ✓ **Choose a slightly higher wattage than the incandescent equivalent**
- ✓ **Check the maximum size to fit your lamp before you go shopping**

The CFLamp should not 'buzz'. If it does, take it back.

Ref#1: www.environment.gov.au/ settlements/ waste/lamp-mercury.html

INSTALLING FLUORESCENT TUBES AND LAMPS

All fluorescent lamps contain some mercury but this is being reduced all the time. Far more mercury (and other pollutants) are released into the atmosphere from burning coal to provide the power for inefficient incandescent lamps. (Australian Greenhouse Office website)

Nevertheless take care when handling these lamps. If one breaks, open a window and leave the room for 15 minutes. Later, using gloves and a moist disposable cloth, pick up the pieces. Do not use a vacuum cleaner. Wrap the pieces and cleaning tools and place in a sealable container[Ref#1].
Place the container in your yellow-top bin or at a Synergy Globe Recycling bin. See the list of locations at www.synergy.net.au

Turn off lights including compact fluorescents when leaving the room.

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CLIMATE ACTIONS
AT HOME, AT WORK, IN THE COMMUNITY

Taking advantage of the new Home Insulation Rebate

There is no better time than now to install ceiling insulation in your own home, or your rental property.

The Australian Government's Energy Efficient Homes Package offers assistance to install ceiling insulation in homes with either no existing or ineffective insulation (with an R-value of less than 0.5).

Under this scheme the cost of eligible insulation installed between 3 February and 1 July 2009 can be reimbursed to a maximum of $1,600. After 1 July 2009, call the hotline on 1800 808 571 to check your eligibility and seek help in arranging installation.

WHAT IS THE R-VALUE?

The '**R-value**', or Thermal Resistance, is a measure of the effectiveness of the insulation. In general, a higher R-value means more effective insulation.

To be eligible for the Energy Efficient Home rebate, the homeowner, landlord or tenant must have a qualified installer insulate the entire ceiling area with a **minimum R-value of 3.5 in an existing dwelling** (in Perth).

WHY INSULATE MY CEILING?

Insulating your home goes a long way to ensuring that it stays a comfortable temperature year round.

Ceiling insulation prevents around 35% of the heat gain (in summer) and loss (in winter) from a house through the roof (ref: SEDO).

Installing insulation in an average house costs between $1,200 and $1,600. The government rebate covers most or all of the cost, and you can save up to 45% in heating and cooling cost.

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TYPES OF CEILING INSULATION INCLUDE:

- **Batts or blankets made of different materials such as rockwool, glasswool, natural wool and polyester**
- **Reflective Foil Laminated sarking**
- **Batts or blankets with foil backing**
- **Loose fill with wool or cellulose fibre**

Check out the Choice Magazine website:
http://www.choice.com.au

HOW TO GET FREE CEILING INSULATION

Energy Efficient Homes Package

The Australian Government offers homeowners up to $1,600 assistance for either installing ceiling insulation, or a solar hot water system. Landlords and tenants (with landlord permission) are eligible for up to $1,000 rebate for ceiling insulation. Depending on the installation date, there are two ways to apply:

Installation between 3 February and 1 July 2009

- Pay for the installation upfront, then apply for reimbursement by completing an application form
- Submit two quotes from qualified insulation installers stating the R-value and details of the proposed insulation
- Submit the tax invoice and receipt for the installed insulation

For full eligibility details, check out the Early Installation Guidelines at the Energy Efficiency Homes website: http://www.environment.gov.au/energyefficiency/

Installation after 1 July 2009

Installation can be arranged by calling 1800 808 571 - a new hotline which has been set up specially to run this program.

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Purchasing a Rooftop Solar Power System for Your Home

You can get renewable electricity for your home by either

Option 1. **installing a rooftop solar photovoltaic (PV) system or**

Option 2. **signing up for GreenPower electricity from Synergy or another accredited supplier.**

Either way you will take a huge greenhouse step for your home by choosing renewable electricity instead of the standard residential electricity generated from coal and gas power stations.

Solar Electricity

You can generate solar electricity for your home from your own roof with a solar photovoltaic (PV) array. The PV system works by converting sunlight to electricity.

Rooftop Photovoltaic Array

With a rooftop PV system, you can:

- generate electricity for your own use
- export excess electricity to the grid

You can install a 1-kilowatt PV system and receive an $8,000 means-tested rebate (see panel on the right) from the Australian Government. After the rebate, the system would typically cost between $2,500 and $3,500, fully installed.

Where do I get more information on solar power systems?

For a suppliers list, look under *'solar energy equipment'* in the Yellow Pages or ask the Climate Actions team for a suppliers list by phoning 9329 2700.

Rooftop solar photovoltaic array

Photovoltaic Rebate

Currently, only households with a taxable income of less than $100,000 per year are eligible for the $8,000 Australian Government rebate.

From July 2009, the new Solar Credits scheme will replace the old rebate. The new rebate will not be means tested. Further details will be available by June 2009.

To find out more about the *photovoltaic rebate*, contact the national information line on 1800 808 571.

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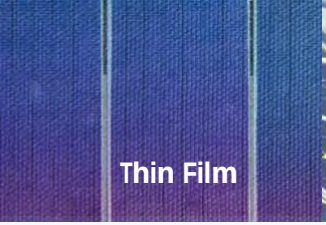

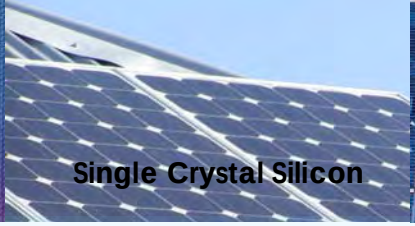

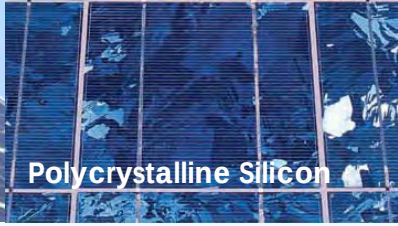

The Solar Cell Panel Options

Thin Film – first used in pocket calculators, lower efficiency than the other solar panel options so more roof area is needed, less affected by temperature and shade than other cell types, less energy required to manufacture, and recovering this energy in under 1 year (Sanchez 08) .

Single Crystal Silicon (or mono-crystalline) – widely used for decades, higher efficiency than the other solar panel options, requires more energy to manufacture, and recover this energy in 2 years (Sanchez 08).

Polycrystalline –uses more space/roof area, slightly less efficient than single crystal silicon cells, but cheaper than single crystal silicon.

Some things to consider before purchasing a system:

- **Do you have an unshaded north facing roof on your home? (An unshaded East or West roof will also do, but with a slight decrease in power.)**
- **Do you have enough roof space? (Space requirement depends on the size of the system and type of solar panels used)**
- **Is your roof readily accessible or will scaffolding be needed?**

Achieving Greenhouse Abatement by Retiring the RECS on your system

If you are choosing a rooftop solar power system for your home to reduce your greenhouse emissions (as well as your power bills), then when getting a quote, ask for **the *cost of the system with your household holding onto the greenhouse abatement.*** This means retiring the RECs with your home system, and not onselling the abatement to companies and power utilities. This is the only way to reduce your own carbon footprint when buying a solar power system.

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Getting Ready for Summer: Shading East and West Windows

East or West facing windows let in the summer sun. Each square metre of unshaded window heats your home by the same amount as a one bar radiator.

In a living room with west-facing windows with blinds but no external shade, the room can be 3 degrees hotter for several hours, than the same room with awnings or shade cloth over the windows.

What are my options for shading windows?

There are many to choose from:

- **Plant trees or tall shrubs**
  - very effective and low cost, but
  - need space to grow away from house
- **Shaded pergola or sail structures**
  - very effective in summer and removable in winter,
  - provide an outdoor shaded living space, but
  - need space to build out from house
- **Window tinting**
  - Can be applied to any window,
  - Moderate cost ($400)*, but
  - Reduces light all year round

* *indicative costs for a 2-3 square metre window in brick wall.*

Did you know?

A curtain or blind on the inside of a window will reduce this heat by around 35%. Shading the outside can reduce the heat by up to 80%.

So choose *external* shading!

How the garden can help?

Avoid paving outside your North, East or West-facing windows. The paving soaks up heat during the day and radiates it at night. Try ground cover or shrubs alongside walls and windows instead.

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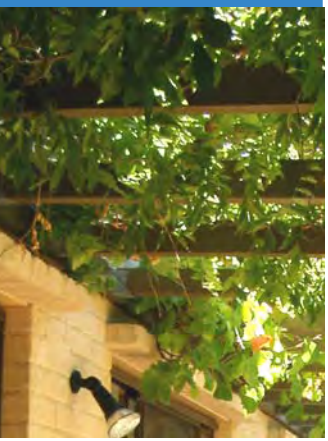
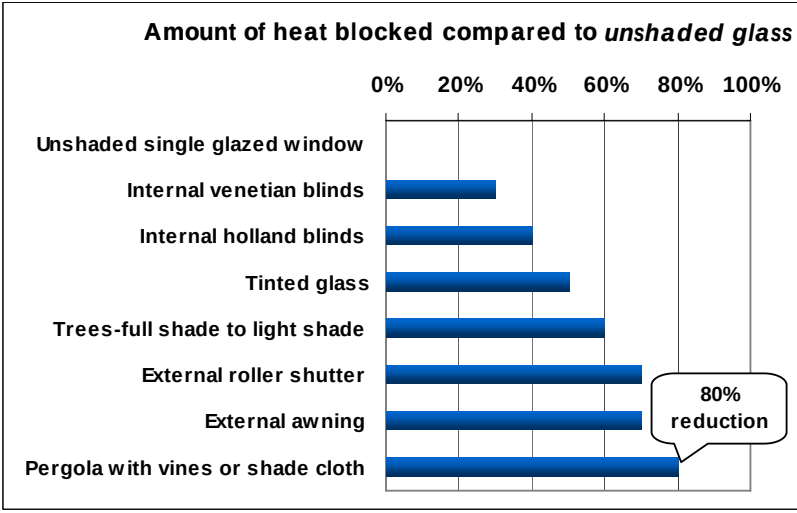
HUNTING AROUND FOR PRODUCTS AND PRICES?

Look in the YellowPages under headings such as 'Awnings', 'Window Roller Shutters', 'Shade Structures & Sails' and 'Carport & Pergola'. You can buy shade cloth and sails from hardware stores too.





Source::http://www.epa.qld.gov.au/publications/p00407aa.pdf/Guide_to_energy_saving_for_windows.pdf

WHAT ARE MY OPTIONS FOR SHADING (continued)

- **Roller shutters**
  - Reduce heat loss in winter as well as heat gain in summer,
  - Adjustable any time of day and improve security and noise control, but
  - More costly (from $800 for manual and $1000 for motor controlled).
- **Awnings or external blinds**
  - Minimal space requirements,
  - Adjustable for the time of day and season, but
  - Moderate cost for product and installation ($400-$700* depending on the material); and
  - May not fit all window types.

Or for a low cost solution, simply hang a roll of shade cloth from the eaves.

* *indicative costs for a 2-3 square metre window in brick wall.*

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CLIMATE ACTIONS
AT HOME, AT WORK, IN THE COMMUNITY

Understanding Solar Hot Water

Replacing your existing Hot Water System (HWS) with a solar system will cut hundreds of dollars off your energy bills each year. The ongoing savings will pay off your investment providing you with free hot water after around 10 years on average.

Government Rebates

The subsidies are for new solar hot water systems with two or more panels. The table below shows the rebates and annual energy savings.

Type of Boost	Aust Gov Rebate Eligibility[1]	SEDO Rebate Eligibility[2]	Annual savings compared to storage unit[3]
Electric	$1600	x	$490
Natural Gas	$1600	$500	$340
Natural Gas	x	$500	
LPG	X	$700	$800

1. Rebate is not available to those accessing the Insulating Australian Households rebate or for systems installed before 3 February 2009. Systems installed before 3 February 2009 may be eligible for $1,000. Rebate information is correct as of March 2009. Rebate is only available when replacing an electric storage hot water system.
2. Rebate is only for a two-panel solar-gas hot water system. Rebate information is correct as of February 2009.
3. Savings/year under each fuel category have been estimated by comparing the running costs of a storage tank system run by that fuel alone and the solar water heater boosted by that fuel. (See SEDO website for running costs of different HWS.)

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NOW IS THE TIME!

Two subsidies are now available to encourage Western Australians to install solar water heaters and help save on energy use, energy bills and the environment.

The cost of a solar water heater depends on the system size and type of booster.

The typical purchase prices after Australian Government rebates are:

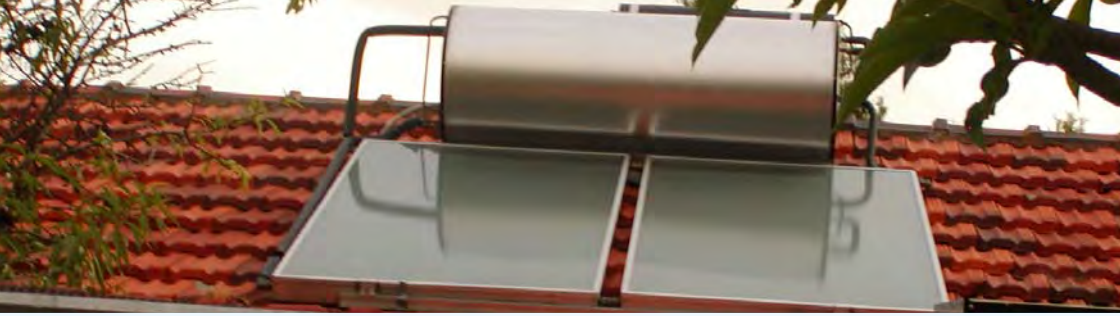
Types of boost	2 panel system	1 panel system
Electric	$3,200	$2,500
Gas	$3,700	$3,500

Prices are indicative only and may vary. Eligible households can claim SEDO rebate and Renewable Energy Certificates (RECs) in addition to Australian Government rebate.

Notes on claiming subsidies

Check the conditions which apply prior to completing a rebate application. For enquiries, call:

DEHWA on **1800 808 571**
SEDO on **1300 658 158**



Renewable Energy Certificates (RECs)

In addition to the rebate, you may be eligible for RECs of around $900. Consider retiring your RECs to really reduce your carbon footprint, otherwise the abatement is on-sold to large companies or power utilities to offset their carbon emissions.

How a Solar Hot Water System Works

Water heats as it circulates through the collector panels on the roof. In some newer models, a special fluid is heated, rather than water, and then transfers the heat to water in the tank. The tank is well insulated to keep the water hot through the night.

In winter, if there is insufficient sun, a gas or electric booster heats the water tank. You can manage the booster's energy use by installing a manual switch or putting in a timer to allow you to heat the water in winter just before you use it. Remember to turn off the booster in the warmer months to save energy.

Some useful tips:

- Locate the unit near your kitchen and bathroom to get hot water quickly
- The solar collector needs to face North for best performance
- Shade one of the panels with shade cloth in mid-summer to avoid water boiling, improved safety & longer unit life

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Choosing and Installing a Water Saving Showerhead

Installing a new generation water saving showerhead means you can have a great shower while saving water and energy.

CAN THESE SHOWERHEADS BE USED WITH MY HOT WATER SYSTEM?

YES, if you have a **solar, electric or gas storage/tank systems** with mains pressure.

NO, if your hot water is from an **instantaneous** system (these are attached to the inside or outside wall of your house). These units heat water according to the flow rate.

NO, if you have a **low pressure solar** hot water system. You do not need a water efficient showerhead as your hot water system is already water efficient.

If uncertain, ring the manufacturer of your unit.

WHAT TO LOOK FOR AND WHERE TO FIND IT?

Most hardware stores and bathroom suppliers sell water saving showerheads. Expect to pay between $40-$100 for a good quality showerhead. Look for a showerhead with the type of spray pattern you like or choose one with multiple settings to give your family the choice of the shower they want. A 4 star rated showerhead will provide a high quality shower using a maximum of 7L every minute.

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HOW MUCH WATER AND ENERGY WILL YOU SAVE?

Exactly how much you'll save depends on the number of people in your household, your hot water system type and how long your showers are, but on average, you could save:

- **Around one tonne of greenhouse gas emissions every year[1] - that's around 10% of the greenhouse pollution from home activities. (http://www.heat.net.au)**
- **From $70 to over $100 on your gas or electricity bills every year, as you'll also use less hot water.**
- **From 15,000 to 25,000 litres of water per year[2] – that's enough to fill a back yard swimming pool.**

1. www.heat.net.au
2. www.sedo.energy.wa.gov.au

Flow Regulators for Taps and Showers

Flow regulators take the place of regular tap washers and can be an alternative to purchasing a water saving showerhead. They save you money by restricting water flow rates.

Claim a Waterwise Rebate* of $2 for each 3 'Stars' or above authorised flow regulators. The rebate is available to a maximum value of $20 per household.

Important Installation Considerations

- **If water leaks from the arm joints, loosen screws and run warm water through arm joints for 10-20 seconds. Turn water off and re-tighten the screws to rectify the problem.**
- **Never use abrasives to clean the showerhead. Clean with contaminant free soapy water or soft, damp cloth.**

How to Install your Water Saving Showerhead

You'll need: A water saving showerhead, plumber's tape, a wrench or adjustable spanner and a dry cloth

1. Unscrew your old showerhead anti-clockwise.
2. Clean and thoroughly dry pipe threads on the open end of the arm joint.
3. Apply 3-4 rotations of plumbing tape tightly over the threads of the arm joint in a clockwise direction.
4. Place the showerhead joint over the arm joint.
5. Install showerhead turning in a clockwise direction. Tighten firmly. Do not over tighten as this will restrict movement of the arm. Do not use the arm to tighten. Use a spanner with cloth so the showerhead joint does not get scratched.

*****_The Waterwise Rebate Program concludes on 30 June 2009_

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Appendix D
Home Energy Audit Manual

Home Energy Visit Manual

CLIMATE ACTIONS
AT HOME, AT WORK, IN THE COMMUNITY

Step by Step Guide
on what to do during a home energy audit

climatewise

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Inside the House	• Power bill and energy use discussion • Green electricity • Lighting • Insulation
Outside the house 1. At hot water unit 2. On East, West and North side of house	• Adjust thermostat (for gas instantaneous only) • Pipe insulation (for storage only and if time permits) • Solar hot water • Orientation and shading
Back in the house	• Water saving showerhead • Fridge (check and adjust) •
If time permits	• Standby power • Draughts around doors and windows

This project is supported by the State Government's Sustainable Energy Development Office and implemented by the Southern Metropolitan Regional Council through a regional partnership with Cities of Canning, Cockburn, Fremantle and Rockingham and Towns of East Fremantle and Kwinana.

2. Introduction

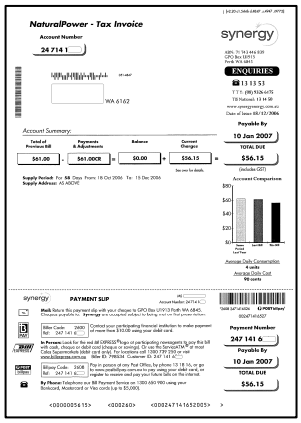
I am (your name) on behalf of the Southern Metropolitan Regional Council (SMRC) and City/Town of (name the appropriate Council) here to discuss efficient ways to reduce energy use in your home. This service is being offered to you under the Climate Actions project supported by the State Government's Sustainable Energy Development Office. I shall look at the amount of energy you use, major sources of energy use, and identify if there is any way you can reduce your energy use. I shall also discuss about the renewable energy and green power.

3. Inside the House

3.1. Energy Bill

- **Q: Do you know how much electricity and gas you use per month or year?**
- Assist with reading the power bill and understanding energy consumption in the house.

- Ask for the last 1 or 2 power bills (or use **sample bills**) and assist the householder to understand how to read and monitor changes in their power consumption using the graph on the bill and the daily units of consumption compared to the **Perth average 15 units (kilowatt-hour) per day**.


NaturalPower - Tax Invoice

synergy

ENQUIRIES

Payable By
10 Jan 2007
TOTAL DUE
$56.15

PAYMENT SLIP

- **Q: Do you know what are the major areas of energy use at your home?**

- Discuss where energy is used most in their house – use **Talking Sheet with pie graph** as a prompt.

- Mention the **top 3 appliances** that use the most energy – i.e. Water heating devices, fridge and heating/cooling appliances.

- **Do you know that you can ask your supplier to supply you green electricity?**

- Mention the option of **green electricity** and that this will be discussed in detail later during this visit.

3.2. Lighting

General Lights

- **Q: What types of lamps do you use in your home?** You may also wish to look around the house to see types of lights in use.
- If incandescent lights are generally used, show CFL (do not give away the lamp) and explain how this light can **reduce** the power bill.
- **Compare** 20W CFL with 100W incandescent bulb and show the difference in energy consumption. Refer to talking slides.

Down Lights

- Downlights are highly energy inefficient. They produce more heat than light and also provide focused light.
- Traditional downlights are 50 watt each.
- Consider 35W replacements (show sample) or replace and rewire with fluorescent lamps.
- **Q: What quality of light you prefer most, warm or Cool?**
- Mention that CFLs are available in both Warm White or Cool Daylight options
- (only if Hg issues comes up: Hg contamination can be reduced significantly if handled with care. CFLs are available in casing)

> Many people have the misconception that halogen lights are more energy efficient. Although they have a lower voltage than standard incandescent lights, the energy they use (wattage) is similar to incandescent lamps. Each lamp is around 50Watts per fitting. So 4 in a room totals to 200 Watts!

4. Outside the House

4.1. Hot water unit

- **Q: Where is your hot water unit?**
- (propose to go and see the hot water unit, may be located outside the house)
- **Locate** their hot water unit.
- **What type**: instantaneous or storage? (See Thermostat flyer for descriptions)
- **What is the energy source**: Is it gas, electric, solar/gas, solar/electric or solar/electric/wood?
- **Locate the thermostat** (see thermostat flyers for each system type).
- If electric storage unit with thermostat hidden behind safety plate, **do not try to open the plate**.

4.2. Adjust Thermostat (for gas instantaneous only)

- **Q: Do you adjust hot water thermostat seasonally to save gas and water in summer?**
- Locate the thermostat.
- Show how to adjust thermostat of the Hot Water System. Refer to Thermostat flyer for guideline.
- Explain how lowering the thermostat in a HWS in summer will reduce the power bill.
- Show householder how to make adjustments to their thermostat. ***Note: due to insurance issues, please do not physically participate in the action***

- Follow the step by step instruction on relevant brochure

4.3. Green Electricity

- Talk through the **benefits** of green electricity and subscribing to
  - NaturalPower by Synergy, or
  - Green electricity from another Green Power supplier available to Perth households (see brochure), or
  - EasyGreen scheme.

- **Cost** is negligible if done with energy saving actions.
- Note **sources** of green electricity – see brochure.
- **Phone** Synergy 13 13 53 during visit if householders are keen.

4.4. Insulation

- **Q: Do you have insulation rebate information?**
- **Q: Do you know what type?**
- **Q: Have you considered upgrading it?**
- They deteriorate over time, upgrade a good option after 20 years.
- SMRC brochure for discussion on new or existing insulation.

4.5. Install Pipe Insulation (for gas and electric storage only)

TIME CHECK

Pipe insulation installation can take significant amount of time, check if this is doable. You may want to do it at the end or leave a 0.5m length of insulation with the householder and refer to the brochure (Thermostat-Storage) with instructions.

- Locate and identify the pipes for the HWS
- Explain how pipe insulation can reduce heat loss of Hot Water System (HWS). Use ½ metre of insulation for demo.
- See step by step instruction from brochure.

4.6. Solar Hot Water System

- **Q: Have you considered a solar hot water system when your current unit is up for replacement?**
- Talk through the benefits of solar hot water systems – lower energy bills and considerable greenhouse savings, especially in summer.
- Point out brochures to assist and the Energy Smart Line **1300 658 158** to assist in selecting a good unit.

4.7. Shading

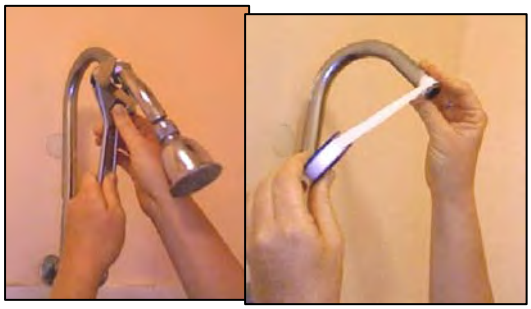
- Use SEDO compass to find out house orientation.
- Identify windows with high heat gain, e.g. windows facing East and West.
- Note importance of external shading as opposed to internal blinds– see **Talking sheet with graph of comparisons**.
- Discuss shading options. Use brochure as needed with pros and cons of each type.

Extra: If North facing windows are large and there may be a lot of heat gain in summer, suggest shading that is seasonal or can be removed in winter.

5. Back in the House

5.1. Water Saving Showerhead (for storage unit only)

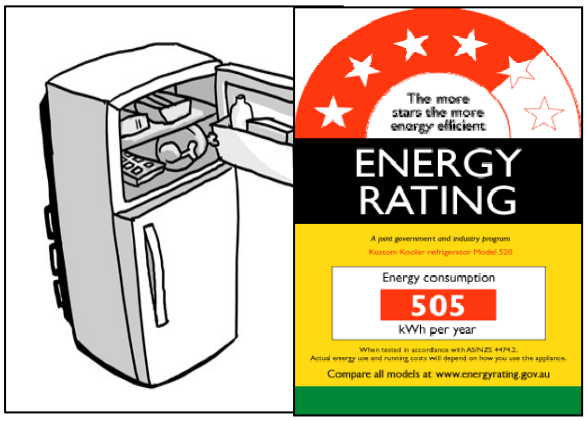
- **Q: Do you have a water efficient showerhead?**
- Explain how the WSS can reduce the power and water bill – **see Talking Sheet with graph**
- Mention new features available with WSS like selectable flow patterns
- If interested, guide the householder to install the WSS in the bathroom (**Note: due to insurance issues, please do not physically participate in the action**)
- See step by step instructions in brochure.



5.2. Fridge Energy Check

- **Q: Do you think you have an energy efficient fridge? Does it have a star rating?**

You can make a difference with how your fridge works by looking at:



- **Position from wall**: Explain the best position of the fridge so that the energy performance is at it's optimum. The fridge needs to be at least 5cm (4 fingers length) away from wall; top back needs free flow of air to avoid hot box effect; away from oven/heater; self closing door; good seal condition.
- **Location relative to oven**: As ovens dissipate heat, positioning a fridge next to the oven will need more energy to run.
- **Self-closing door**: Make sure the door swings shut and not remain open. If not, the fridge may need propping up at the front. Suggest placing a piece of cardboard under the front legs so that the front is slightly higher than the back. The door should now shut properly.
- **Condition of seals**: Test the condition of the seal so the door fully closes. Put a business card between the seals and if it stays in place then the seal is working effectively and no energy is loss.

- **Q: Do you have a second fridge? If so, do you need it?**
- People buy a new fridge but do not consider decommissioning the old one. If connected to power, fridges consume significant amount of energy. If not very essential, it is recommended to decommission the old fridge.
- Give suggestions on energy saving choices in refrigeration. Look for the star rating. Choose a suitable size. 1 larger fridge/freezer is better than 2 small units.

6. Extra Actions to Look at if Asked or Time Permits

6.1. Standby Power

- **Q: Do you know that appliances put on standby still consume energy?**
- Show how Standby Power operates and where best to switch off appliances
- Check for standby light or heat or use the power meter to test the difference of energy use when the appliance is completely off and when it is on standby.
- If appliance does not have an 'Off' switch, suggest a power board with switches for hard to get to power points.

Standby power typically uses 10% of the total energy consumed in a house.

7. Reference Materials

This is a help section for the auditors and no need to discuss with the households. This can be used to answer queries of the households, if any.

7.1. Finding Suppliers

- Go through the Yellow Pages to identify some of the suppliers that provide items that save energy and reduce power bills. Have a rough guide of supplier list so you can point them in the right direction.
- Shading – where to look awnings, tinting, solar pergola
- Solar Hot Water System : check with the householders in yellow pages.

7.2. Further Information

- **Energy Smart Line** **1300 658 158**
  Independent service for free advice and information on becoming more energy efficient and using renewable energy. This service is provided by the Sustainable Energy Development Office (SEDO).
  www.sedo.energy.gov.au

- **Synergy**
  Information for houses with Photovoltaic solar power wanting to sell electricity back into the main grid.
  www.synergyenergy.com.au/Residential_Segment/
  Green_Energy /Renewable_Energy_Buyback.html

- **The Green House** **9391 6032**
  23 Willow Way, Maddington.
  Demonstration home for tinting, pelmets, sail shade option vegetation design). Open to the public Wednesday 1pm – 5pm and Saturday 11am – 4pm.

- **Environment House** **9271 4488**
  61 Eighth Ave, Maylands.
  Environmental Centre that provides information and some demonstrations on sustainable living, renewable energy and permaculture.

- **Southern Metropolitan Regional Council** **9329 2700**
  9 Aldous Place, Booragoon, WA 6154
  'EnergyActions' project team in the Greenhouses Section.
  Contact Person – Stephanie Jennings or Anis Zaman

8. Checklist and Guide for Home Visit:

8.1. Tools/appliances to take with you

a) PVC tape
b) A piece of insulation
c) 2 Compact Fluorescent Lamps – bayonet and screw type.
d) 35W downlight
e) Water Saving Showerhead
f) Thermometer
g) SEDO Compass

8.2. Things/materials to Show

a) Compact fluoro lights – bayonet/pin and screw type.
b) Water saving showerhead
c) Insulation material for outdoor hot water pipes
d) Info Pack complete set of 'ClimateActions' brochures

8.3. Things to Give

a) Thermometer
b) SEDO Compass
c) Pipe insulation 0.5m (if needed and household wants to put on later)
d) Set of chosen 'ClimateActions' brochures

climatewise
SMRC response to climate change

j [v2.20 c1.54rlb d.4847 .s.4947 .i9772]

NaturalPower - Tax Invoice

Account Number

24 714 1

051-4847

WA 6162

synergy

ABN: 71 743 446 839
GPO Box U1913
Perth WA 6845

ENQUIRIES

13 13 53

T T Y: (08) 9326 6175

TIS National: 13 14 50

www.synergyenergy.com.au

Date of Issue **18/12/2006**

Payable By

10 Jan 2007

TOTAL DUE

$56.15

(includes GST)

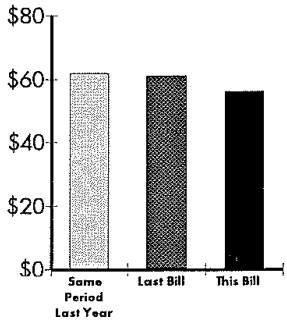
Account Summary:

Total of Previous Bill		Payments & Adjustments		Balance		Current Charges		
$61.00	-	$61.00CR	=	$0.00	+	$56.15	=	$56.15

See over for details.

Supply Period: For **58** Days From: 18 Oct 2006 To: 15 Dec 2006
Supply Address: AS ABOVE

Account Comparison



Average Daily Consumption
4 units
Average Daily Cost
90 cents

---

synergy **PAYMENT SLIP**

MS
Account Number: 24 714 1

*2608 2471416526 POST billpay

002471416527

Payment Number

247 141 6

Payable By

10 Jan 2007

TOTAL DUE

$56.15

Mail: Return this payment slip with your cheque to GPO Box U1913 Perth WA 6845. Cheques payable to: **Synergy** are accepted subject to being met on first presentation.

BPAY
Biller Code: 2600
Ref: 247 141 6
Contact your participating financial institution to make payment of more than $10.00 using your debit card.

Bill EXPRESS
In Person: Look for the red *Bill* EXPRESS® logo at participating newsagents to pay this bill with cash, cheque or debit card (cheque or savings). Or use the ServiceATM® at most Coles Supermarkets (debit card only). For locations call 1300 739 250 or visit www.billexpress.com.au Biller ID: 798534 Customer ID: 247 141 6

POST billpay
Billpay Code: 2608
Ref: 247 141 6
Pay in person at any Post Office, by phone 13 18 16, or go to www.postbillpay.com.au to pay using your debit card, or register to receive and pay your future bills on the internet.

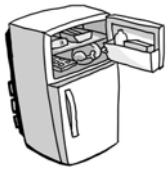
By Phone: Telephone our Bill Payment Service on 1300 650 900 using your Bankcard, Mastercard or Visa cards (up to $5,000).

<0000005615> <000260> <000247141652005> >

Appendix E
Auditors form for households

Suggestions from your Home Energy Visit

Address: _____ **Date :**_____

	Suggested Actions & Notes
 **Insulation**	
 **Renewable Electricity**	
 **Lighting**	
 **Hot Water System**	
 **Shading E-W & N windows**	
 **Water efficient Showerhead**	
 **Fridge/Freezer**	
 **Other** (Standby, Draught-proofing)	

We hope the visit has been useful to you in taking steps to save energy. If you have any queries contact the ClimateWise Team at Southern Metropolitan Regional Council on 9329 2700.

Appendix F
Suppliers lists for PV suppliers and solar hot water system suppliers

Listing of Perth Suppliers/Installers of Grid-connected Home Solar Power Systems

Company Name	Australsun	EcoSmart	Electrical Renewable Energy	Green Grid Power	One Earth Outlet	Renewable Energy Superstore	Renewable Logic	SolarGain	Solar Energy Systems Ltd	Solar Sales Pty. Ltd.	Solar Unlimited	SolarShop Australia	WA Solar Supplies
Contact Name	Alex Bruce	Ed Stafford	Markus Enkler	Glen George		Darren Beltman	Ramon Gregory	Paul Hart	Tony Martin	Bob Blakiston	Kieron D'Arcy	Nathan Stone	Dacre Barrett-Lenard
Address	1 Quarry St Fremantle	PO Box 564 Fremantle	PO Box 241 Rockingham	4/9 Boag Rd Morley	Shop 7, 39 Erindale Rd Balcatta	28 Port Kembla Dve Bibra Lake	7 Irvine St Bayswater	190 Carrington St Hilton	3/81 Guthrie St Osborne Park,	16 Belgravia St Belmont,	P O Box 359 North Perth	4/146 Carrington St, O'Connor, Fremantle	5/83 Hector Street (West) Osborne Pk
Phone	0400 134 894	1300 326 669	9527 5969	9376 1183	1300 327 841	1300 856 477	9371 5111	1300 739 355	9204 1521 (metro)	9477 5888	1300 765 292	9331 2200	9244 2668
Email	abruce@australsun.com	inquiry@ecosmart.net.au	renewableenergy@iprimus.com.au	Greengridpower@bigpond.com.au	info@oneearthoutlet.com.au	admin@renewenergy.com.au	ramon@renewablelogic.com.au	paul@solargain.com.au	info@sesltd.com.au	info@solarsales.com.au	kieron@solarunlimited.com.au	nathan.stone@solarshop.com.au	energy@wasolar.com.au
WebSite	http://www.australsun.com	http://www.ecosmart.net.au		http://www.greengridpower.com.au	http://oneearthoutlet.com.au	http://renewenergy.com.au/	www.renewablelogic.com.au	http://www.solargain.com.au	http://www.seslt d.com.au	http://www.solarsales.com.au	http://www.solarumlimited.com.au	http://www.solarshop.com.au	http://www.wasolar.com.au

Created 5 Feb 2008, Updated April 2009

Note this Listing is a guide only and may be incomplete. It is based on SEDO's Energy Smart directory listings plus some businesses whom we have been directly made aware of.
If you see a business missing, please contact the Climate Wise Team on 9327 2900.

Some possible questions to ask suppliers:

Do they provide performance warranty on the solar panels over 25 years, replacing panels if they drop in performance?

What is the inverter warranty and expected lifetime?

Do they provide emergency (post-sales) maintenance on the system, especially inverter?

How do the solar panels perform in cloudy conditions or part-shade conditions (if this is relevant to your Northern roof)?

Do they have any systems you can see or visit on public buildings?

What is the price with you holding onto the renewable certificates (and getting the greenhouse benefit) rather than them onselling the certificates (RECs)?

What is their installation history like?

Sustainable Energy Development Office
Government of Western Australia

SUPPLIERS OF SOLAR WATER HEATERS IN WESTERN AUSTRALIA

Apricus 38C Weston Street CARLISLE WA 6101 Phone: 0410 613 556 Email: jdagencies@westnet.com.au Website: www.apricus.com.au	**Edwards** PO Box 405 WELSHPOOL WA 6986 Phone: 9351 4600 Fax: 9351 4635 Email: info@edwards.com.au Website: www.edwards.com.au	**Solahart** Phone: 1300 669 876 Email: solahart@solahart.com.au Website: www.solahart.com.au
Beasley PO Box 547 BALCATTA WA 6914 Phone: 9446 6800 Fax: 9446 6822 Email: enquiry@rinnai.com.au Website: www.rinnai.com.au	**Endless Solar** PO Box 2504 STRAWBERRY HILLS NSW 2012 Phone: 1300 730 707 Fax: (02) 9557 8422 Email: info@endless-solar.com Website: www.endless-solar.com	**Solar Kleen** 24 Bassendean Road BAYSWATER WA 6053 Phone: 9271 5725 Fax: 9271 6136 Email: sola@sola-kleen.com.au Website: www.sola-kleen.com.au
Conergy Unit 2 / 17 Macadam Place BALCATTA WA 6021 Phone: 9240 7922 Fax: 9240 7977 Email: b.cope@conergy.com.au Website: www.solitairesolar.com	**Megasun** Unit 1 / 28 Port Kembla Drive BIBRA LAKE WA 6163 Phone: 1300 856 477 or 9418 6033 Fax: 9418 6638 Email: megasun@megasun.net.au Website: www.megasun.net.au	**Solco** 126 Sheffield Road WELSHPOOL WA 6106 Phone: 9334 8100 Fax: 9334 8199 Email: info@solco.com.au Website: www.solco.com.au
Chromagen 27/29 Glassford Road KEWDALE WA 6105 Phone: 9352 7010 Fax: 9352 7099 Email: marty@chromagen.com.au Website: www.chromagen.com.au	**Rheem** PO Box 405 WELSHPOOL WA 6986 Phone: 9351 4600 Fax: 9351 4635 Email: rheem.wa@rheem.com.au Website: www.rheem.com.au	**Velux** PO Box 93 ST PETERS NSW 2044 Phone: 1800 683 589 Fax: (02) 9550 3289 Email: felix.chau@velux.com.au Website: www.velux.com.au
Dux Suite 6, 19 Mumford Place BALCATTA WA 6021 Phone: 9229 4400 Fax: 9229 4407 Email: dhotwater@dux.com.au Website: www.dux.com.au	**Rinnai** PO Box 518 BELMONT WA 6984 Phone: 1300 555 545 Fax: 1300 555 655 Email: enquiry@rinnai.com.au Website: www.rinnai.com.au	

More information on solar water heaters and State Government rebates
Energy Smart Line
Phone: 1300 658 158

More information on Renewable Energy Certificates (RECs)
Office of the Renewable Energy Regulator
Email: orer@orer.gov.au
Website: www.orer.gov.au/householders

This list of suppliers is provided for information only and there is no endorsement given or implied by the Sustainable Energy Development Office for equipment or services provided by these organisations. The Sustainable Energy Development Office accepts no representations whatsoever for the quality of, or any other feature of, any product made or sold by these organisations or any service provided by them.

Appendix G
Telemarketer's script for follow-up phone calls to audit participants

ADVANTAGE
COMMUNICATIONS AND MARKETING

Southern Metropolitan Regional Council – Climate Wise Program Follow up

RESPONDENT SUBURB

PHONE_____Interviewer_____ Date completed _____Res_____

Mr/Ms_____? *(Name on contact list).* **Hello, this is _____ calling on behalf of the Southern Metropolitan Regional Council. We're conducting a short evaluation of the free in-home energy assessment service you received back in** *_____date. (looking at ways to save energy .... hot water choices, lighting, shading, heating and cooling, that sort of thing)* **Firstly, can I ask...?**

1. How would you rate <u>the usefulness of the information and guidance</u> provided to you by the assessment? Would you say ...?

Read out

READ OUT, ROTATING DIRECTION

Not Useful at all	1 →q i
Not very Useful	2 →q i
Neutral	3
Somewhat Useful	4
Very Useful	5
Can't say **(Do not read out)**	6

If rated not useful -

i. Can I ask why you say that? _____

_____

2. Have you made, or are you in the process of making *(ie. product quoted/ordered)* **any of the changes recommended in the assessment?**

Yes 1 →q 2i
No 2 →q 3

i. For each of the following energy saving areas, can I ask you whether you have made, or are you in the process of making changes in that area as a direct result of our assessment service ?

*Note as many as apply....promt...***Was there anything else?**

		Q2i	Q3i
a.*installed insulation or replaced old insulation*	<u>Insulation</u>	Yes 1 No 2	Yes 1 No 2
b. photovoltaics or PV?, solar power system installed on roof?	<u>Renewable Energy</u>	Yes 1 No 2	Yes 1 No 2
c.replacing downlights with energy saver halogen replacement? Or replacing incandescent light globes with compact fluorescent lights	<u>Lighting</u>	Yes 1 No 2	Yes 1 No 2
d.solar hot water system installed? Or in the process of installation	<u>Hot Water Systems</u>	Yes 1 No 2	Yes 1 No 2
e. installing awnings to shade windows? Planting trees to shade windows?	<u>Shading</u>	Yes 1 No 2	Yes 1 No 2
f. installed?	<u>Water saving showerhead</u>	Yes 1 No 2	Yes 1 No 2
g. replacing old refrigeration systems with new energy efficient models?	<u>Refrigeration</u>	Yes 1 No 2	Yes 1 No 2
h. turning off all appliances on standby at the wall powerpoint? i.e. computers, televisions, stereo, printers etc .	<u>Standby power</u>	Yes 1 No 2	Yes 1 No 2
i. Hot water system exposed	<u>Insulated Pipes</u>	Yes 1 No 2	Yes 1 No 2

_____ (please specify) other

ii. Have you noticed any reduction in your power bill?

Yes 1 →q3
No 2 →q 3

3. Do you think you will make any (other –yes at Q2) changes recommended by the assessment in the future?

Yes 1 →q 3i
Maybe 2 →q 3i
No 3 →q 4

i. For each of the following energy saving areas, can I ask you whether you are likely to make changes in that in that area in the future as a direct result of our assessment service ?
Note as many apply in Q3i column of table above. If answered yes at Q2, only read out saving areas that said 'No' to at Q2i

4. Do you have any additional comments you wish to make about the assessment?

_____

_____

5. Finally, do you require any further information from us to make any of the changes recommended by the assessment?

Yes 1
No 2

If yes...note full details and arrange appropriate contact

_____

_____

Thank you very much for your participation in the project.

Appendix H
Energy and cost saving calculation notes

Energy and Cost Saving Calculation Notes

Selected actions	Expected tCO2-e reduction	Assumptions
Renewable Energy	2.55 tCO2-e/yr	Assume each household signing up for 50% (on average) green electricity. Assumed the average electricity consumption in each household is 15kWh/day. Calc Note: Natural Power calc 15kWh 100% abatement = 15 x 365 = 5.475 MWh then x 0.98 = 5.1 tonnes abatement per year. 50% option is 2.55 tonnes per year.
Insulation	0.44 tCO2-e/yr	0.44 tonnes per household every year for the life of insulation based on electric heating in an average home. Calc Note – 26% of total energy use on heating and cooling and up to 30% reduction in these costs (SEDO). Ave energy 15+ 1.4kWh = 16.4kWh x 365 x 0.26 x 0.30 = 467 kWh/yr so if electric heating & cooling 0.44 tonne/yr to 0.09t.p.a if gas. Annual electricity savings 467 x .1394 = $65.
Solar Hot Water	3.5 tCO2-e/yr	3.5 tonnes per household/yr based on replacing an electric storage hot water unit. Calc note: Annual savings $490 (SEDO website graph) for solar-electric compared to electric storage. Savings 3.49MWh per year = 3.47 tonnes @ 0.98 emission factor for WA electricity.
Shading	1.24 tCO2-e/yr	1.24 tonnes per household/yr saved in air conditioning based on shading over 8m^2 of west-facing windows. Calc Note– based on cooling degree hours on 7.7m^2 west-facing windows in a 40m^2 living space with and without shade (though both with internal blinds) = difference of 636 to 373 cooling hours x 5kW Air Conditioner for this space over 1 year. 263hrs/yr x 5kW = 1,315kWh/yr x 0.98 (emission factor) = 1.24 tonnes/yr; x $0.1394 = $183/yr.
Showerhead	1.0 tCO2-e/yr	
Lighting	0.6 tCO2-e/yr	0.6 tonnes per household/yr based on replacing five 100W with 20W lamps. Assumed each household had 5 lights to change. Calc Note: annual electricity saving 4hrs x 5 x (100-20)W/1000 x 365= 584kWh = 0.58 tonnes at 0.98 WA Elect conversion factor (DCC)[13]. Cost saving = 584 x 0.1394=$81 per year
Standby Refrigeration	0.25 tCO2-e/yr 0.37 tCO2-e/yr	0.25 tonnes per household/yr for appliances like computers, TVs and stereos. Calc Note: Actual measurements showed TV on standby, PC plugged in where 6-10W. So, for 5 appliances 5 x 6W=30Watts typical total x 24 x 365 = 0.262 MWh/year = 0.25 tonnes per year; 262kWh/yr*$0.1394= $36 per year. See table below for the calculations detailing this expected GHG gas saving figure. The figure of 2kWh/unit/day was used based on the assumption that domestic fridges use 600kWh per year.

**Note: Figures based on the results from previous SMRC EnergyActions project*
*** Note: The Emission Factor for the Western Australian Grid is 0.94 kg/kWh[14]*

	Actions	no. of units	unit	Estimated savings kWh/unit/day	Potential energy reduction kWh/yr	Potential GHG abatement kgCO_2-e annually
Refrigeration	Decomission fridges/freezers	1	fridge	2	730	686.2
	Replace fridge/freezer seals	1	seals	0.22	160.6	150.964
	Energy efficient upgrade	1	fridges	0.4	292	274.48
			Average:	0.87	394.20	370.55

[13] National Greenhouse Accounts Factors, February 2008.
[14] See National Greenhouse Accounts (NGA) factors at http://www.climatechange.gov.au/workbook/pubs/workbook-jun09.pdf

Appendix I
Media Stories

MEDIA MONITORS

Cockburn Gazette Community
10/02/2009
Page: 12
Section: General News
Region: Perth Circulation: 25419
Type: Suburban
Size: 86.00 sq.cms
Frequency: -T-----

Grant for home efficiency

SMRC chairman Doug Thompson and SMRC regional greenhouse coordinator Anis Zaman with an energy-efficient light bulb.

WA's Sustainable Energy Development Office has given the Southern Metropolitan Regional Council $44,173 to assist 750 households to improve their energy efficiency.

The SMRC covers the cities of Canning, Cockburn, Fremantle and Rockingham, and the towns of East Fremantle and Kwinana.

SMRC chairman and Fremantle councillor Doug Thompson said the project would help reduce greenhouse gases.

"Over a five-year period, it's estimated the project would create a 7000-tonne reduction of these gases. That's about 1800 medium-sized cars off the road," he said. "The project will also help households save money on their energy bills, reduce demand for electricity at peak times and encourage long-term community involvement in the fight against climate change."

Cr Thompson said participating homes had previously expressed an interest in receiving energy-saving information through the SMRC's Climate Actions program.

"This project will provide the relevant information, such as how to install your own renewable energy system and giving the homes a walk-through energy assessment," he said.

"A panel of specialists will visit households to identify potential areas of energy-saving, then advise residents on how they can implement the idea effectively with the least cost."

Households with the best energy-efficiency results will receive an award at the end of the project in December.

MEDIA MONITORS

Canning Community
10/02/2009
Page: 18
Section: General News
Region: Perth Circulation: 34994
Type: Suburban
Size: 76.00 sq.cms
Frequency: -T-----

SMRC Chairman Doug Thompson and regional greenhouse co-ordinator Anis Zaman with an energy efficient light bulb.

Boost for energy scheme

WESTERN Australia's Sustainable Energy Development Office has given the Southern Metropolitan Regional Council (SMRC) $44,173 to assist 750 households to improve their energy efficiency.

The SMRC covers the cities of Canning, Cockburn, Fremantle and Rockingham, and the towns of East Fremantle and Kwinana.

SMRC chairman and Fremantle councillor Doug Thompson said the project would help reduce greenhouse gases.

"Over a five-year period, it's estimated the project would create a 7000-tonne reduction of these gases. That's about 1800 medium-sized cars off the road," he said.

"The project will also help households save money on their energy bills, reduce demand for electricity at peak times and encourage long-term community involvement in the fight against climate change."

Cr Thompson said participating homes had previously expressed an interest in receiving energy-saving information through the SMRC's Climate Actions program.

MEDIA MONITORS

Comment News
10/02/2009
Page: 15
Section: General News
Region: Perth Circulation: 51904
Type: Suburban
Size: 102.00 sq.cms
Frequency: -T-----

Green light for homes

THE Southern Metropolitan Regional Council is helping homes in Canning become more sustainable, after successfully gaining a community project grant.

WA's Sustainable Energy Development Office has given the SMRC $44,173 to help 750 homes in Canning, Cockburn, Fremantle, Rockingham, East Fremantle and Kwinana improve their energy efficiency.

SMRC Chairman Doug Thompson said the Fostering Sustainable Energy Practices at Homes project would help reduce greenhouse gases.

"Over a five-year period, it's estimated the project would create a 7000-tonne reduction of these gases – that's about 1800 medium-sized cars off the road," he said.

"The project will also help households save money on their energy bills, reduce demand for electricity at peak times and encourage long-term community involvement in the fight against climate change."

Participating homes have previously expressed an interest in receiving energy-saving information through the SMRC's Climate Actions program, after research showed people were keen to improve their energy-efficiency, but lack of knowledge and support prevented them from taking action.

"This project will provide the relevant information, such as how to install your own renewable energy system, as well as installing renewable energy systems and giving the homes a walk-through energy assessment," Mr Thompson said.

Doug Thompson and regional greenhouse co-ordinator Anis Zaman with an energy-efficient light bulb.

"A panel of specialists will visit households to identify potential areas of energy-saving, then advise residents on how they can implement the idea."

Homes achieving the best energy-efficiency results will receive an award at the end of the project in December 2009.

MEDIA MONITORS

Kwinana Courier
06/02/2009
Page: 5
Section: General News
Region: Western Australia
Type: Suburban
Size: 58.00 sq.cms
Frequency: ----F--

Boost to efficiency

KWINANA homes are set to become more energy efficient after the South Metropolitan Regional Council (SMRC) received a $44,000 community project grant to help fight climate change.

The WA Sustainable Energy Development Office grant will help 750 homes across the SMRC area to improve their energy efficiency and reduce greenhouse gases.

SMRC chairman Doug Thompson said the Fostering Sustainable Energy Practices at Homes project would reduce greenhouse gas emissions by an estimated 7000 tonnes over five years.

"This project will provide the relevant information, such as how to install your own renewable energy system, as well as installing renewable energy systems and giving the homes a walk-through energy assessment," he said.

"A panel of specialists will visit households to identify potential areas of energy-saving then advise residents on how they can implement the idea effectively."

Households achieving the best results will receive an award in December 2009.

FREMANTLE GAZETTE
NEWS PG 12 10/02/09

Grant for home efficiency

SMRC chairman Doug Thompson and SMRC regional greenhouse coordinator Anis Zaman with an energy-efficient light bulb.

WA's Sustainable Energy Development Office has given the Southern Metropolitan Regional Council $44,173 to assist 750 households to improve their energy efficiency.

The SMRC covers the cities of Canning, Cockburn, Fremantle and Rockingham, and the towns of East Fremantle and Kwinana.

SMRC chairman and Fremantle councillor Doug Thompson said the project would help reduce greenhouse gases.

"Over a five-year period, it's estimated the project would create a 7000-tonne reduction of these gases. That's about 1800 medium-sized cars off the road," he said. "The project will also help households save money on their energy bills, reduce demand for electricity at peak times and encourage long-term community involvement in the fight against climate change."

Cr Thompson said participating homes had previously expressed an interest in receiving energy-saving information through the SMRC's Climate Actions program.

"This project will provide the relevant information, such as how to install your own renewable energy system and giving the homes a walk-through energy assessment," he said.

"A panel of specialists will visit households to identify potential areas of energy-saving, then advise residents on how they can implement the idea effectively with the least cost."

Households with the best energy-efficiency results will receive an award at the end of the project in December.