An Evaluation of the Energy Efficiency Program for Low Income Households

Prepared for

Energy Division,
Department for Transport, Energy and Infrastructure

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Australian Institute for Social Research

February 2006
Executive summary

This report outlines the results of an evaluation of the South Australian Government’s Energy Efficiency Program for Low Income Households. The program was established by the South Australian State Cabinet in June 2003, in partnership with community based welfare organisations and is administered by Energy Division within the Department for Transport, Energy and Infrastructure. Between July and December 2005 the program was evaluated by a team from the Australian Institute for Social Research at the University of Adelaide, who were commissioned by the Energy Division after a competitive tender process.

The primary aim of the Energy Efficiency Program for Low Income Households is to reduce financial hardship faced by low-income households as a result of rising energy costs. The program seeks to achieve its objectives through the delivery of energy efficiency services in collaboration with community based welfare organisations. The objectives of the program are to:

- Reduce financial hardship as a result of energy costs experienced by low-income households
- Reduce energy use and greenhouse gas emissions
- Improve comfort levels in low-income households
- Develop employment opportunities in energy efficiency services

In evaluating the program the team consulted with key stakeholders including the Energy Division, the six Service Providers and the program clients. Data obtained from the key stakeholders was analysed to establish the program’s success in addressing its primary aim and objectives. The following methods were used to gather data from the stakeholders:

- A telephone survey of the program participants.
- Focus groups with the program participants.
- Interviews with key informants (including Energy Division and Service Provider representatives)
- Analysis of key documents and reports

The results of the evaluation suggest that the program helped to reduce defaults on bill payments, lowering levels of disconnections and lowering levels of presentation to welfare and health sector organisations for assistance. Moreover data prepared by Sustainable Focus for the Australian Institute for Social Research indicates that the program has reduced energy use, resulting in significant annual and lifetime savings. In addition the data confirm that the program is resulting in a significant reduction in greenhouse gas emissions.
### KEY FINDINGS AT A GLANCE

<table>
<thead>
<tr>
<th>Key Finding</th>
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<tbody>
<tr>
<td>The original audit target of 10,000 was reached in mid-October 2005. A further 920 audits were completed within the original program funding by mid-January 2006, to give a total of 10,920 audits completed within original program funding.</td>
</tr>
<tr>
<td>The number of audits undertaken accelerated rapidly after the first three months, peaking at around 800 audits per month in September 2004 and then tapering off over the Christmas break. The number of audits remained in excess of 300 per month for the remainder of the program, peaking at around 870 in July 2005.</td>
</tr>
<tr>
<td>A total of 811 fridges were bought back from approximately 560 households through the Fridge Buy-Back Scheme exceeding the revised target of 800 fridges.</td>
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<tr>
<td>A total of 222 interest free loan applications were approved by 31 December 2005; 184 for fridges and freezers; 23 for washing machines; 9 for external blinds; 4 for curtains and 2 for insulation.</td>
</tr>
<tr>
<td>The program recipients surveyed were on low incomes with the majority falling within the second and the third household deciles of the South Australian income distribution.</td>
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<tr>
<td>Around 40 percent of survey respondents indicated that the audit program had definitely made a noticeable difference to their energy bill while a further 30% were yet to determine if the program had made a difference. Of the latter group, many respondents indicated that they had already taken measures to reduce their energy use and the audit reaffirmed their strategies.</td>
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<tr>
<td>More than 95 percent of respondents that indicated that the program made a noticeable difference to their energy bill attributed this difference all, or in part to the energy audit.</td>
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<tr>
<td>Nearly all survey respondents (97.1 percent) accepted free CFL globes from auditors, more than 85 percent accepted free draught excluders and more than 45 percent free showerheads.</td>
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<td>CFLs were installed by auditors in almost 46 percent of households. Householders installed more than 34 percent of CFLs left by auditors, and more than 10 percent were installed by someone other than the auditor or the householder.</td>
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<tr>
<td>More than 90 percent of survey respondents who received a showerhead in the retrofit-kit said they were satisfied with the quality of the showerhead.</td>
</tr>
<tr>
<td>Forty three of the survey respondents participated in the Fridge Buy Back Scheme.</td>
</tr>
<tr>
<td>The overall annual savings from the audit and retrofit kit are estimated to be around $43,000 for the 1000 survey respondents.</td>
</tr>
<tr>
<td>The overall lifetime savings from the audit and retrofit kit for the 1000 survey respondents are estimated to be around $208,000.</td>
</tr>
<tr>
<td>Annual savings for all elements of the program are estimated to range between $510,000 and $603,000.</td>
</tr>
<tr>
<td>Lifetime savings from all elements of the program are estimated to range between $2.4 million and $2.9 million.</td>
</tr>
<tr>
<td>More than 25 percent of respondents reported having difficulties paying energy bills before taking part in the program. Fewer than 5 percent reported that they were experiencing difficulties with energy bills after receiving the program.</td>
</tr>
<tr>
<td>Around 27 percent of survey respondents said they experienced improvements in their comfort level since the audit.</td>
</tr>
<tr>
<td>Around 80 percent of survey respondents had recommended the program to family/or friends. Furthermore, over 70 percent said they had encouraged others to implement energy efficient practices after the audit.</td>
</tr>
<tr>
<td>The program generated 13 full-time equivalent (FTE) paid positions and 2 FTE voluntary positions.</td>
</tr>
<tr>
<td>Most participants felt the audit process was systematic and included a thorough check of electrical appliances and assessment of the whole house.</td>
</tr>
</tbody>
</table>

A significant proportion of survey respondents, most of whom were low-income earners, indicated that the program had achieved its objective of improving comfort levels in their homes.
The program also appears to have attained its objective of creating employment. There is direct evidence that thirteen paid full-time equivalent positions were created with Service Providers by the program as well as two voluntary full-time equivalent positions. There is also anecdotal evidence of program workers achieving further employment in other fields as a result of their employment in the program.

In summary, the program has made considerable progress towards meeting its four objectives of reducing financial hardship, reducing energy use and carbon emissions, improving comfort levels and increasing employment opportunities in energy efficiency services.

In achieving its objectives the program has also generated significant flow on benefits. It has raised awareness of environmental issues and led to energy saving behaviour. A significant proportion of survey respondents and focus group participants indicated that they had encouraged others to implement energy saving measures in their households and had taken additional energy saving measures themselves since receiving their energy audit. Meanwhile others who had implemented energy saving measures before entering the program said they were reassured by the audit and encouraged to continue implementing energy saving measures. Whilst it is difficult to measure the exact flow on effect of these processes their impact on the community is likely to be highly significant over time.

While the evaluation indicated a high degree of success in meeting stated objectives a number of potential enhancements have been identified for consideration.

The evaluation identified a range of program strengths including:

- Its solid foundation in the community sector - Service Providers had intimate knowledge of the needs of the target audience.
- Grassroots publicity provided through the Service Providers helped to access the target audience.
- The Energy Division provided effective basic energy training to the Service Provider auditors, which served the program well.
- A high level of goodwill generated between the Energy Division and the Service Providers fostered continuous improvement of the program.
- The mode of engagement delivered a positive working relationship between Energy Division and the Service Providers, which helped make program delivery effective.

Among the key program weaknesses identified by the evaluation were:

- The lack of a comprehensive promotional strategy for the program, which contributed to problems with recruitment of the target population.
- There was no overall marketing and promotional strategy and no central contact point for the program for potential participants.
• In most cases there was no ongoing training for auditors, and limited or no training to deal with issues confronted in household visits beyond the scope of a basic energy check.
• Inadequate recognition in program design, particularly in the identification of reasonable participant targets.
• Inadequate recognition of the time and effort required to develop effective referral networks.

A range of recommendations to enhance the effectiveness and efficiency of the program are made in section 5.
1.0 Introduction

1.1 Context

In June 2003, State Cabinet approved the establishment of the Energy Efficiency Program for Low Income Households (henceforth referred to as “the program”) in partnership with Community Based Welfare Organisations (CBWOs), and allocated around $2.05 Million to the program.

The need for the program was identified by CBWOs concerned about the impact of rising electricity costs on low income households, particularly the most vulnerable. Research commissioned by the Essential Services Commission of South Australia has indicated that rising electricity and gas prices have contributed to financial hardship in a significant number of low-income households (Lawrence 2002, WREAG 2004). The South Australian Council of Social Service (SACOSS) Low Income Electricity Consumers project (Lawrence 2002) indicated that nearly one third of respondents from a survey of the general population experienced varying degrees of difficulty paying electricity bills over the last 12 months (ibid p 15). The SACOSS study suggested that difficulties in paying electricity bills had led to an increase in the demand for emergency financial relief and support from welfare Service Providers (ibid p 33).

In a study of the impact of electricity price rises on 12 low income households the Western Region Energy Action Group (WREAG) drew similar conclusions (WREAG 2004). The WREAG report found that “of the 12 participant households, 8 had significant energy debts” (ibid p 7). Of particular relevance to this evaluation is the finding that, “Only two of the twelve participant households were able to reduce the amount of power consumed (but not enough to avoid cost increases) (ibid p 7). The combination of low disposable income and rental tenure places limitations on the capacity of low income households to introduce energy saving initiatives.

A sharp increase in both the number of residential customers disconnected from electricity for failure to pay and those on extended payment arrangements followed the significant increase in electricity retail prices that occurred in January 2003. Data from the Essential Services Commission of South Australia (ESCOSA 2005) indicate that residential disconnections for failure to pay rose from 5,136 in 2002/03 to 13,719 in 2003/04 before declining to 7,868 in 2004/05 (ESCOSA 2005). Similarly the number of extended payment plans or instalment plans established with residential customers increased sharply from 208,965 in 2002-03 to 264,148 in 2003-04 (ESCOSA 2004: 40). ESCOSA indicate that the data include late paying customers who “may not necessarily be classed as financially disadvantaged” and have revised the way this measure is calculated in the 2004-05 Annual Performance Report.

Substantial growth in AGL’s Staying Connected program over the 2003-04 period also suggests an increase in financial hardship over the period. The

A further indicator of hardship is the incidence of households reporting an inability to heat their homes in the past 12 months because they were short of money. The ABS General Social Survey (2003, 2004) indicates that around 4.9 percent of South Australian households in the lowest equivalentised income quintile fall into this category compared to 2.5 percent for Australia as whole (Richardson and Travers 2005:10).

It is in this context that the Energy Efficiency Program for Low Income Households was introduced in 2004. The program follows related initiatives including; Energy Friends (DTEI Energy Division), Athol Park project (Western Region Energy Action Group) and Cool Communities (Australian Greenhouse Office and the Conservation Council of South Australia). Of particular relevance to this evaluation is the Energy Friends project which is undergoing evaluation at the time of writing.

The program sought to reach as many low income households as possible and provide a benefit to all. The Henderson Poverty Line was taken into consideration to help target the program to low income households. It was estimated that the program would reach around 1 in 8 households below this line which was broadly within the budget allocated for the program.

Energy audits had been utilised in earlier South Australian energy efficiency initiatives and were considered to be an effective method of encouraging and supporting people to use less energy. The program included the provision of a small retro-fit kit to households, a Fridge Buy Back Scheme and an Interest Free Loan Scheme to support the purchase of more energy efficient electrical items. Combined this package was designed to play a significant role in helping to reduce energy consumption and greenhouse gas emissions.

This evaluation follows an internal review of the Program undertaken by the non-government Service Providers (Anglicare SA et al 2005). The development of the program was informed by a pilot audit program undertaken by Sustainable Focus which delivered 20 home energy audits to low income households in The Parks. This pilot program gathered feedback on how to target energy audits to low income households (Sustainable Focus 2004).

1.2 Focus of the Evaluation

A competitive Invitation to Tender for the evaluation of the Energy Efficiency Program for Low Income Households was issued in May 2005 to interested organisations by Energy Division. The tender was won by the Australian Institute for Social Research at the University of Adelaide and arrangements to begin the evaluation were finalised in July 2005. Sustainable Focus and Harrison Market Research were subcontracted to undertake components of the evaluation. The evaluation concluded in December 2005.
The evaluation had four components which were:

1. The effectiveness of the Program at achieving its 4 key objectives:
   a. reduced financial hardship as a result of energy costs;
   b. reduced energy use;
   c. improved comfort levels; and
   d. the development of employment opportunities.
2. The effectiveness of the program delivery model (i.e. collaboration between the Energy Division and Service Providers) and to collate and assess learnings from the Program Delivery model.
3. The flow-on benefits of the program.
4. Potential modifications or improvements to the overall program.

2.0 Evaluation methodology

2.1 Stakeholder approach and methods

A stakeholder approach was employed for the evaluation. The evaluation team engaged with key stakeholders involved in the program including program funders, purchasers and providers and program clients. Data obtained from the stakeholders were analysed to establish the program’s success in addressing its aims and objectives.

The following specific methods were used to gather data from key stakeholders.

- A telephone survey of the program participants.
- Focus groups with the program participants.
- Interviews with key informants
- Analysis of key documents and reports

2.1.2 Telephone survey

A telephone survey of program participants was undertaken to obtain client feedback and to estimate energy savings. The survey instrument was developed by the evaluation team in consultation with the six Service Providers and the Energy Division. The survey collected information from program participants taking part in the energy audit, FBB and in the IFLS. The survey instrument is included as appendix 1.

Harrison Market Research was sub-contracted by the University of Adelaide to deliver the telephone survey to program participants.

The survey collected information on how well the program met its objectives in accordance with the evaluation criteria. A sample of 1000 program participants of the 10,000 participants in the program was utilised. To protect
the privacy of the participants, all participants in the program were asked by
their Service Providers if they would consent to being surveyed by the
University of Adelaide about the program. Approximately 3000 agreed to be
surveyed and 1000 were sampled at random from the consenting population.

The survey instrument was piloted with 30 program participants to test the
survey tool. It was subsequently adjusted to take account of feedback
obtained through the pilot.

A 64 percent response rate was obtained from the telephone survey providing
a sound basis for analysis of the client population.

2.1.3 Focus groups

Focus groups were held with program participants in each of the six Service
Provider regions. The aim of the focus groups was to obtain a richer
understanding of the issues investigated by the telephone survey. A semi-
structured questionnaire was used to guide discussion in the focus groups (see
appendix 2). Focus groups were held at the following locations:

- Whyalla
- Peterborough
- Noarlunga
- Woodville
- Elizabeth
- Mt Barker

2.1.4 Auditor discussion group

A meeting with household auditors was held in November 2005 to obtain
feedback on the program from those directly involved in the delivery of the
services. Twelve auditors attended. The auditors engaged in a wide ranging
discussion of their experiences as auditors and their recommendations for
improving the program.

2.1.5 Interviews

Interviews were conducted with key informants to acquire information to assist
the research team to address the four project components of the evaluation
criteria. Key informants were recruited in consultation with Energy Division
and are listed in appendix 3.

2.1.6 Key documents

The project team also analysed key documents and reports as part of the
evaluation. The documents included:

- Samples of the Energy Friends® Training Resources, including the
  Home Energy Auditing Manual and Home Energy Auditing Training
  Course PowerPoint Slideshow.
• Samples of Promotional Materials, including posters, flyers, newspaper adverts, magazine articles etc.
• Spreadsheets and databases being used by Service Providers to manage their project data.
• Monthly statistical reports prepared by Energy Division.
• Quarterly reports prepared by each Service Provider.
• The Service Providers Internal Review Document.
• Completed Referral Forms, Auditor Worksheets, Summary Sheets.
• Fridge Buy-Back and Interest Free Loan Documentation from Energy Division.

2.1.7 Data triangulation

Survey, focus group, interview and document analysis data were triangulated to identify actions taken by householders that were likely to save energy and greenhouse gases and lead to financial savings.¹

As part of this process Sustainable Focus developed a formula to estimate energy, financial and greenhouse savings realized by households participating in the program. The formula estimated:

• The quantity of energy and greenhouse gas saved by each action.
• The cost benefit of each action.

The Sustainable Focus methodology is detailed in appendix 4.

¹ Triangulation refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings. It involves combining research methods to give a range of perspectives. Using triangulation can make findings more robust. Since much social research is founded on the use of a single research method and as such may suffer from limitations associated with that method or from the specific application of it, triangulation offers the prospect of enhanced confidence. This evaluation has surveyed program participants and held focus groups afterwards to gain more insight into the responses provided. It has also interviewed auditors and program coordinators and compared this data with our other findings – a process of triangulating data. See Keen and Packwood (1995).
3.0 The Program

This section provides an overview of the program including the aims and objectives, the services delivered, eligibility and targets, referral process, service delivery and program implementation. The broad achievements of the program are also identified.

3.1 Aims and objectives

The primary aim of the Energy Efficiency Program for Low Income Households is to reduce financial hardship faced by low-income households as a result of rising energy costs.

The objectives of the program are to:

- Reduce financial hardship as a result of energy costs experienced by low-income households.
- Reduce energy use and greenhouse gas emissions.
- Improve comfort levels in low-income households.
- Develop employment opportunities in energy efficiency services.

The aim of the program aligned with the recommendations of the South Australian Poverty Inquiry (Parliament of South Australia 2003) and of the South Australian Council of Social Services and the Council on Ageing’s Low Income Electricity Consumers Study (SACOSS 2003).

The program sought to achieve its objectives through the delivery of energy efficiency services in collaboration with CBWOs.

3.2 Energy Efficiency Services

The energy efficiency services delivered by the program included the provision of free home energy auditing and retrofit service. This service was complemented by two sub-schemes – one to buy back inefficient fridges and another to offer interest free loans to fund the purchase of energy efficient appliances or the purchase and installation of energy saving products.

Eligible households were able to receive a free 60 to 90 minute home energy audit based on the auditing model developed through the Energy Friends program. Auditors delivering the service were required to complete a Home Energy Auditing Course and were provided with an auditing toolkit which included an appliance meter, bucket, thermometer, compass, pads of worksheets and samples of energy saving products.

The primary aim of the home energy audit was to identify opportunities for household energy savings and engage householders in a process of
implementing strategies to help realise these potential savings. The energy auditor conducted a walk-through audit of the home with the householder, using auditing questions from the *Energy Friends Auditing Worksheet* as prompts. During the audit the auditor noted measurements, observations and responses to questions on the Auditing Worksheet. The auditor then recorded all suggestions on a summary sheet, a copy of which was kept by both the auditor and the householder. Finally the householder was invited to nominate three actions that they were willing to undertake. These were recorded on a magnetised *Energy Friends Action Card* that could be kept on the fridge as a reminder.

Eligible households were offered a free energy saving retrofit kit consisting of two compact fluorescent lamps (CFLs), an AAA rated showerhead and a draught excluder to exclude draughts. On average, the installation of the showerhead and the CFLs was estimated to save around $62 per year. The Auditor was encouraged to install the items during the audit wherever possible so that the householder could start saving right away.

As a high proportion of low-income households lived in rented housing, they generally had limited control over their hot water system and fixed heating and cooling appliances. They also had little or no control over energy efficiency measures related to building design and structure. It was therefore decided to target potential savings that might be derived from improving the efficiency of fridges and freezers by offering a $50 payment to eligible householders, as an incentive to retire an inefficient fridge or freezer. The auditor made the offer during the audit and if the householder wished to take it up they would notify the Energy Division who would arrange for the fridge to be collected, degassed and the metal recycled. This payment was increased to $125 following a review of the Scheme after the first three months of operation which revealed that $50 was not a sufficient incentive.

An Interest Free Loan Scheme (IFLS) was also established to provide interest free loans of between $200 and $1000 to households that as a result of the audit had the potential to derive significant energy savings by purchasing a new fridge, washing machine, microwave, curtains, external shading or insulation.

### 3.3 Eligibility and targets

The target population for the program was low income households experiencing financial hardship in urban and regional South Australia. The program was open to people who were on low incomes or experiencing financial hardship in accordance with set eligibility criteria outlined in table 1.
**Table 1: Program Eligibility Criteria**

<table>
<thead>
<tr>
<th>LOW INCOME: At least one member of the household must possess or be eligible for a Health Care Card</th>
<th>FINANCIAL HARDSHIP: Households which according to the professional judgement of Service Providers are experiencing financial hardship, of which energy bills are a contributing factor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy supply has been disconnected in the past 12 months</td>
<td>Payment extensions normally sought on energy accounts</td>
</tr>
<tr>
<td>Household accessed Emergency Electricity Payment Scheme in past 12 months</td>
<td>Household participating in an energy retailer’s financial hardship program such as AGL’s “Staying Connected” or Origin Energy’s “Power On”.</td>
</tr>
<tr>
<td>Households that have received Commonwealth emergency relief funding in the last 12 months</td>
<td>Households that are referred by a relevant organisation on the grounds of financial hardship as specified in the contract.</td>
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</table>

In collaboration with other Service Providers and the Energy Division, the Service Providers were required to develop, trial and refine an assessment tool to assess household eligibility for the services. They were also required to document the households existing energy related financial hardship.

Over the two year period the program set the following targets:

- Provision of an audit and retrofit kit to 10,000 low income households
- Buying back 2000 fridges/freezers. This was later revised to 800 fridges following the 3-month review of the scheme and the change in incentive from $50 to $125 per fridge.

### 3.4 Referral process

It was anticipated that the primary means by which clients would access the services was via referral from relevant community organisations and government services. Establishing this system of referral was the responsibility of the Service Provider in consultation with the Energy Division. Service Providers could not limit the provision of the services to their own client group, but were required to promote the availability of the services to other community based organisations, relevant government Service Providers such as Home and Community Care programs, Family and Youth Services, Centrelink and energy retailer financial hardship programs. However, other methods of referral were also employed, including direct presentations to community groups, promotion and marketing, and word-of-mouth.

### 3.5 Service delivery

The Energy Division sought tenders from CBWOs to deliver the service across South Australia. A regional approach was taken dividing the State into 7 metropolitan and 12 non-metropolitan regions based on groupings of Local Government Areas. The regional coverage of the program is illustrated in figures 1 and 2.
Figure 1: Metropolitan Service Provider Areas

LEGEND
- Anglicare
- Lutheran Community Care
- Uniting Care Wesley Bowden
- Uniting Care Wesley Adelaide

Scale: 1:360,000
Figure 2: Regional Service Provider Areas

Legend:
- Lutheran Community Care
- Uniting Care Wesley Adelaide
- Uniting Care Wesley Port Pirie
- Salvation Army

Scale 1:2,600,000

Department for Environment and Heritage
CBWOs were invited to submit proposals to deliver services and nominate which regions they wished to tender for. Six CBWOs were contracted to deliver services across the State. The Service Providers and their regions are set out in table 1.

**Table 2: Service Providers by Region**

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglicare SA</td>
<td>Central metro</td>
</tr>
<tr>
<td></td>
<td>Northern metro</td>
</tr>
<tr>
<td></td>
<td>Far northern metro</td>
</tr>
<tr>
<td>Lutheran Community Care</td>
<td>North East metro and hills</td>
</tr>
<tr>
<td></td>
<td>Barossa</td>
</tr>
<tr>
<td></td>
<td>Murraylands</td>
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<tr>
<td></td>
<td>Upper South East</td>
</tr>
<tr>
<td></td>
<td>Lower South East</td>
</tr>
<tr>
<td>Salvation Army</td>
<td>Whyalla</td>
</tr>
<tr>
<td></td>
<td>Eyre Peninsula</td>
</tr>
<tr>
<td></td>
<td>Riverland</td>
</tr>
<tr>
<td>UnitingCare Wesley Adelaide</td>
<td>Southern metro</td>
</tr>
<tr>
<td></td>
<td>Far southern metro</td>
</tr>
<tr>
<td></td>
<td>Fleurieu Peninsula</td>
</tr>
<tr>
<td>UnitingCare Wesley Bowden</td>
<td>North West metro</td>
</tr>
<tr>
<td>UnitingCare Wesley Port Pirie</td>
<td>Lower North</td>
</tr>
<tr>
<td></td>
<td>Mid North</td>
</tr>
<tr>
<td></td>
<td>Far north</td>
</tr>
<tr>
<td></td>
<td>Yorke Peninsula</td>
</tr>
</tbody>
</table>

Each of the Service Providers were engaged via a comprehensive contract which specified expected outcomes, targets, service delivery requirements, focus of the program, referral, reporting, evaluation, record keeping, contributions from Energy Division and a range of other matters and special conditions including timeframes and other arrangements. Each metropolitan region had a target of 1000 audits whereas each non-metro region had a target of 250 audits.

**3.5.1 Service Delivery of the Fridge Buy-Back Scheme**

Following a tender process Energy Division engaged Denron (a private contractor) to provide fridge collection and recycling services.

Auditors promoted the availability of the scheme during the audit and if a householder was interested, completed a Fridge Buy-Back Application Form. This form was faxed to Denron who then arranged a time with the householder to collect the fridge. Once collected, Denron would notify Energy Division who then arranged for a cheque for $125 per fridge to be posted to the householder.

Fridge buy-backs were limited to three per household and were only available to households in the seven metropolitan, Barossa and Fleurieu Peninsula Regions.
3.5.2 Service Delivery of the Interest Free Loan Scheme

The Interest Free Loan Scheme was formally begun on 17th June 2004, and was separately funded to the rest of the program. The first application was received in July 2004.

The Energy Division coordinated the Interest Free Loan Scheme (IFLS). The Children, Youth and Family Service Agency of the Department for Families and Communities (DFC) were responsible for conducting financial assessments of applicants. PIRSA Rural Finance from the Department for Primary Industries and Resources SA (PIRSA) was responsible for approving loan applications and administering the loan fund. The scheme was funded by the Department for Primary Industries and Resources (PIRSA) and by the following energy companies; AGL, Energy Australia, Origin, TRU and Santos.

3.6 Program Commencement

Funding agreements with the CBWOs commenced between late December 2003 and mid January 2004.

UnitingCare Wesley Bowden commenced audits on the 18th of December 2003. The remaining five Service Providers commenced their first audits between mid-February and mid-March 2004.

Energy Division established regular meetings with the Service Providers to discuss progress, raise issues and provide opportunities to network and share information.

The first fridge was bought back in July 2004. The Interest Free Loan Scheme formally commenced on 17th June 2004, and the first IFLS application was received in July 2004.

3.7 Achievements

The program has met and exceeded its overall targets. As following sections detail, the program has reached a significant proportion of low income households experiencing hardship and is well placed to increase the reach of the program to this population.

3.7.1 The number of audits undertaken by Service Providers

The original audit target of 10,000 was reached in mid-October 2005. A further 920 audits were completed within the original program funding by mid-January 2006, to give a total of 10,920 audits completed.

The breakdown of audits per agency is provided in table 3.
Table 3: Audits per agency by original target by audits completed

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Original Audit Target</th>
<th>Actual Audits Completed January 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglicare</td>
<td>3000</td>
<td>3740</td>
</tr>
<tr>
<td>Lutheran Community Care</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>UnitingCare Wesley Adelaide</td>
<td>2250</td>
<td>2430</td>
</tr>
<tr>
<td>UnitingCare Wesley Bowden</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>UnitingCare Wesley Port Pirie</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Salvation Army</td>
<td>750</td>
<td>750</td>
</tr>
<tr>
<td>Total</td>
<td>10,000</td>
<td>10,920</td>
</tr>
</tbody>
</table>

The monthly takeup of audits is illustrated in Figure 3. The number of audits undertaken accelerated rapidly after the first three months, peaking at around 800 audits per month in September 2004 and then tapering off over the Christmas break. The number of audits remained in excess of 300 per month for the remainder of the program, peaking at around 870 in July 2005.

The drop-off toward the end of the program was a result of the limited number of audits that could be undertaken in October, November and December 06 as the original funding was used up.

Figure 3: Total Audits by Month, December 2003 – January 2006

Source: DTEI Energy Division
3.7.2 Fridge Buy-Back Scheme – number of fridges bought back

A total of 811 fridges were bought back from approximately 560 households through the Fridge Buy-Back Scheme out of the original program funding, exceeding the revised target of 800 fridges.

**Number of Fridge Buy-Backs completed out of original funding**

A total of 811 fridges were bought back from approx. 560 households through the Fridge Buy-Back Scheme out of the original program funding, exceeding the revised target of 800 fridges.

Figure 4 charts the numbers of fridges bought back per month since the first fridge was collected in July 2004.

**Figure 4: Fridge Buy Backs per month**

![Figure 4: Fridge Buy Backs per month](image)

The extended funding allows for another 350 fridge buy-backs, which will give an overall total around 1150 fridges.
3.7.3 Interest Free Loan Scheme – number of applications

A total of 222 interest free loan applications were approved by 31st December 2005; 184 for fridges and freezers; 23 for washing machines; 9 for external blinds; 4 for curtains and 2 for insulation.

Figure 5 illustrates the uptake of the IFLS since it commenced in July 2004. It highlights an increase in momentum in line with the increase in audit and fridge buy-back numbers.

Figure 5: IFLS Uptake

Of the 184 households that purchased a fridge or freezer using the Interest Free Loan Scheme, 83 had an old fridge bought back through the Fridge Buy Back Scheme, while 101 kept or disposed of their old fridge themselves.
4.0 Results

This section reports on the results of the telephone survey and focus group
discussions and other consultations.

4.1 Survey respondent demographics

One thousand program participants were surveyed by telephone to assess
their views on whether the Program had met its aims and objectives. This
section provides an overview of the demographic and other key
characteristics of the respondents in the context of the programs objective of
targeting low income households experiencing financial hardship.

Survey respondents were predominantly female, and concentrated in mature
age groups. More than 70 percent of respondents were female while around
71 percent were aged 60 years or over. Key demographics are summarised in
table 4.

Table 4: Survey demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td>20 to 24 years</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>25 to 34 years</td>
<td>25</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>35 to 44 years</td>
<td>71</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>45 to 54 years</td>
<td>97</td>
<td>9.7</td>
</tr>
<tr>
<td></td>
<td>55 to 59 years</td>
<td>87</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>60 to 64 years</td>
<td>115</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>65 years or over</td>
<td>598</td>
<td>59.8</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>291</td>
<td>29.1</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>709</td>
<td>70.9</td>
</tr>
<tr>
<td>Average weekly earnings before tax</td>
<td>Less than $100 per week</td>
<td>13</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>$100 to $199 per week</td>
<td>88</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>$200 to $299 per week</td>
<td>605</td>
<td>60.5</td>
</tr>
<tr>
<td></td>
<td>$300 to $499 per week</td>
<td>153</td>
<td>15.3</td>
</tr>
<tr>
<td></td>
<td>$500 per week or more</td>
<td>35</td>
<td>3.5</td>
</tr>
</tbody>
</table>

The survey respondents were mostly on low incomes with the majority falling
within the second and the third household deciles\(^2\) of the South Australian
income distribution (Travers 2005: 51). This group comprises a high
proportion of people dependent on income support payments and is more
likely than other groups to be experiencing financial hardship. Fewer than 20
percent of respondents had average weekly earnings before tax of more than
$300 per week. More than 60 percent had average weekly earnings before
tax of between $200 and $299 per week, and approximately 10 percent
earned less than $199 per week before tax.

\(^2\) A decile corresponds to a 10 percent grouping within a 100 percent range.
The main sources of income for respondents were the aged pension; the disability support pension; and the Department of Veterans Affairs pension. More than 50 percent of respondents owned their own homes, more than 25 percent were in public housing and fewer than 10 percent were in private rental. More than 10 percent were living in retirement villages.

A key objective of the program has been to reach low income households and those experiencing financial hardship related to the payment of energy bills. The data reported above indicate that the program is reaching low income households. There is also evidence that the program is reaching a high proportion of households experiencing financial hardship related to the payment of energy bills. Table 5 indicates that more than 25 percent of respondents to the survey reported having difficulties paying energy bills before taking part in the program. A challenge for the program is to implement appropriate strategies to help increase the proportion of people it services in this category. This matter is taken up in detail later in the report.

### Table 5: Proportion of respondents with difficulty paying energy bills before the program

<table>
<thead>
<tr>
<th>Difficulties paying bills before the program</th>
<th>N (/1000)</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulties paying bills before the program</td>
<td>256</td>
<td>25.6</td>
</tr>
</tbody>
</table>

#### 4.2 The audit

This section reports on the impact of the audit on energy bills and key issues arising for the clients and auditors involved in the program.

#### 4.2.1 Impact of audit on energy bills

Table 6 indicates that more than 95 percent of respondents who said the program made a noticeable difference to their energy bill attributed this difference all, or in part to the energy audit.

### Table 6: How much of the difference in energy bill attributable to the program

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>214</td>
<td>21.4</td>
<td>53.6</td>
<td>53.6</td>
</tr>
<tr>
<td>In part</td>
<td>169</td>
<td>16.9</td>
<td>42.4</td>
<td>96.0</td>
</tr>
<tr>
<td>Not at all</td>
<td>3</td>
<td>.3</td>
<td>.8</td>
<td>96.7</td>
</tr>
<tr>
<td>Unsure</td>
<td>13</td>
<td>1.3</td>
<td>3.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>399</td>
<td>39.9</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

When considering these results it should be noted that many focus group participants indicated that they had already taken measures to reduce their energy usage before the audit took place, including installing low energy light bulbs and low volume shower heads. A large proportion of these participants
said they appreciated the audit because it affirmed their energy reduction strategy was working but the audit did not make a noticeable difference to their energy usage because they had already taken action to reduce energy consumption.

Many focus group participants said that it was quite difficult to estimate how much impact the audit had on reducing their bills and pointed to changing life circumstances within their households as a major cause of variations in energy costs from bill to bill. For example, participants noted that their bills increased despite installing energy efficient appliances after children who had left home returned to stay or when visitors stayed for periods of time. Others reported that purchasing new appliances like computers, or medical equipment in response to changing needs had increased their power consumption since the audit.

4.2.2 Electricity meters

The energy auditors noted that financial hardship for some people was related to faulty meters and difficulties addressing this with energy providers. Faulty meters can produce high energy bills regardless of whether energy efficient appliances are installed and other energy efficient practices introduced. Auditors said that when some energy providers were queried about faulty meters by consumers the latter were often told their meters were working correctly even when the auditors’ tests found that the meters were not working properly. An auditor showed the evaluation team a three month, $20,000 power bill from a program participant (which was impossible for the participant to have accrued given their life circumstances) who was told by their energy provider that his/her meter had tested as working correctly. However, when the auditor tested the meter it was faulty. Auditors said that when they had contacted energy providers on behalf of program participants the energy providers were more likely to address the situation than if their client rang the energy provider themselves.

4.2.3 Household fittings and energy efficiency

Auditors and focus group participants complained that the Housing Trust was continuing to strip curtains and blinds from homes and remove relatively efficient gas heaters from homes when renovating public housing. It should be noted however that the policy of the Trust is to only remove curtains and blinds if they are regarded as no longer in a serviceable condition and that the proportion of curtains and blinds are left by previous tenants is negligible. In addition Trust policy is not to provide heating in its housing. Old heaters are removed by the Trust if they are deemed to beyond their useful life or represent a safety hazard. There was concern that the Housing Trust was installing relatively inefficient electric storage hot water systems. It is the Trusts current policy to replace water heaters with like for like when they are no longer serviceable. Where they are electric water heaters, the Trust policy is to ensures that they operate on the cheaper J tariff rate. Tenants of the Housing Trust reported long waiting times in response to requests to the Trust for skylights and other energy saving devices to be installed in their homes.
The Trust policy is to only fit skylights in rooms where there are no external windows. Private renters in an evaluation focus group indicated they had less capacity than public renters to make their landlords improve the energy efficiency of their homes. It was suggested that private landlords who did make changes tended to recover their costs through increases in rent, which presented a strong disincentive to renters to request energy efficiency improvements to their homes.

Auditors with backgrounds in the building industry suggested that new homes were not as energy efficient as they might be which made implementing effective energy saving changes quite difficult. Many new homes had large, open plan living areas, which could not be easily cooled in hot weather without a powerful air conditioner.

The auditors also said that financial hardship for many of their clients was caused by multiple social and economic disadvantages. Encouraging energy efficiency via an audit had only limited utility in these circumstances. Auditors suggested that their training should be upgraded to include how to refer clients to social welfare agencies when requests for help were received.

### 4.3 Retrofit items

Table 7 indicates that almost all survey respondents (97.1 percent) accepted free CFL globes from auditors, more than 85 percent accepted free door snakes and more than 45 percent free showerheads.

![Table 7: Audit items received by program participants](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact fluorescent lamps</td>
<td>971</td>
<td>97.1</td>
</tr>
<tr>
<td>Shower head</td>
<td>455</td>
<td>45.5</td>
</tr>
<tr>
<td>Door snake</td>
<td>858</td>
<td>85.8</td>
</tr>
</tbody>
</table>

### 4.4 The compact fluorescent lamps (CFL)

Table 8 indicates that auditors installed CFLs into almost 46 percent of households, and left CFLs at approximately 50 percent of homes, according to the survey respondents. Householders installed more than 34 percent of CFLs left by auditors, and more than 10 percent were installed by someone other than the auditor or the householder. Fewer than 5 percent of CFLs were not installed. The main reason given for not installing the CFLs within the short-term was that the participant did not want to waste their old globe.
### Table 8: CFLs installed or left behind

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed</td>
<td>468</td>
<td>46.8</td>
</tr>
<tr>
<td>Left behind</td>
<td>493</td>
<td>49.3</td>
</tr>
<tr>
<td>Can't say/refused</td>
<td>10</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>971</td>
<td>97.1</td>
</tr>
<tr>
<td>Missing</td>
<td>29</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Survey respondents reported that more than 83 percent of light bulbs were still installed at the time of the survey. The main reasons for the CFLs no longer being installed were:

- the globes failed.
- the globes were not bright enough.

It appears that in some instances the auditor only gave the participant one globe.

Table 9 indicates that more than 93 percent of respondents stated that they were happy with the quality of the globes. Fewer than 4 percent of respondents said they were not satisfied with the product.

### Table 9: Satisfaction with the quality of the CFLs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>933</td>
<td>93.3</td>
</tr>
<tr>
<td>No</td>
<td>38</td>
<td>3.8</td>
</tr>
<tr>
<td>Total</td>
<td>971</td>
<td>97.1</td>
</tr>
<tr>
<td>Missing</td>
<td>29</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

Other findings from the survey on this issue include:

- Approximately 25 percent of respondents bought more CFL globes.
- 4 percent believed these globes lasted longer than the old ones.
- More than 3 percent thought CFLs were not bright enough.
- 4 percent thought that they took too long to get bright.
- CFL globes do not fit into small fittings.
- The globes flicker/flash when turned off.

Focus group members commented that a greater range of globes would have been appreciated. Some expressed concerns over the safety of the globes (low energy light bulbs will explode if handled incorrectly during fitting), and were worried that the globes harmed the eyes because full spectrum light is not produced by CFLs. Others expressed concern over the effect of the gas contained in CFLs on the environment.
4.5 The showerheads

Survey respondents reported that more than 74 percent of the showerheads they received were installed by the auditor with the remainder left behind. More than 29 percent of shower heads that were left behind were not installed. A further 18.5 percent of showerheads were installed by the householder, with the remaining 7.5 percent of showerheads provided yet to be installed.

The main reasons for not installing the shower head given by survey respondents were:

- did not have the expertise or ability to install it.
- had not had enough time to install it.
- too costly to pay someone else to install.
- could not install myself.

Focus group participants also raised issues with installing the showerheads in Housing Trust and private rental homes citing long waiting times and the reluctance of private landlords to pay for installation if they were not able to install the items themselves. The Housing Trust did however provide the program with blanket permission for the installation of showerheads in their properties.

Participants who did install the shower head reported that more than 92 percent were still installed. Reasons given for shower heads not still being installed included:

- shower heads delivered a poor quality shower.
- shower heads made the water flow hot and cold.
- you had to stay under the shower a long time to get clean.

More than 90 percent of survey respondents who received a showerhead in the retrofit-kit said they were satisfied with the quality of the showerhead. Approximately 45 percent of the respondents thought the showerhead was effective or did the job, and more than 21 percent said that it saved both energy and water. Approximately 4 percent said the water pressure in the showerheads was poor, and 1 percent stated that the showerheads leaked.

4.6 The draught excluders

Feedback from focus group participants suggests that they appreciated the draught excluders but indicated it was hard to determine how much energy was saved by their use. Some participants said they had become enthusiastic users of draught excluders and were making their own.
4.7 The fridge buy-back scheme

Forty three of the survey respondents participated in the Fridge Buy Back Scheme. Fridges ranged in age from 5 to 50 years old. The survey indicated that:

- 36 of the 43 fridges that were retired under the FBB scheme were in full use before the fridge was collected. 26 of these fridges were the main fridge in the household, with 11 classified as an ‘other’ fridge (second or third fridge), and 6 as either a chest or upright freezer.
- 32 of the 43 fridges “bought-back” were replaced. These refrigerators were replaced with 11 main large fridges; 10 main medium fridges; 2 main small fridges; 1 other medium fridge; 5 chest fridges; and 2 upright freezers.

These results suggest that the majority of program participants used the FBB scheme to upgrade their main fridge rather than to get rid of a “back shed” second fridge. It is also noteworthy that one in four who removed a second fridge indicated that they would replace it.

The auditors indicated that some fridges that were scrapped as part of the scheme were still in better condition than the main fridge used in some low-income households. Auditors also expressed concern that some low income households they audited did not have a fridge at all. They suggested that an opportunity exists to ‘cascade’ fridges to remove the most inefficient from circulation.

4.8 The interest-free loan scheme

While the survey failed to pick up anyone who participated in the Interest Free Loan Scheme a number of focus group participants said they had received loans through the scheme. Some focus group participants complained about the ‘red-tape’ involved in accessing the scheme. A number of participants were concerned about the way the loan was processed by Children, Youth and Family Services (CYFS), indicating that some of the questions involved in the loan application were intrusive.

Key informants were concerned that the scheme was of limited benefit to the most vulnerable as interest free loan repayments were difficult for low-income earners to repay when they have little or no surplus income. It was suggested that people most in need would benefit from a grant based scheme rather than a loan scheme.

4.9 The follow up call

Auditors were required to undertake a follow up call with service recipients. Table 10 indicates that more than 37 percent of survey respondents indicated
that they had received a follow up phone call from an auditor after the audit, with a similar proportion indicating that they had not.

### Table 10: Whether respondents received follow up calls

<table>
<thead>
<tr>
<th>Did you receive a follow up call?</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>377</td>
<td>37.7</td>
</tr>
<tr>
<td>No</td>
<td>364</td>
<td>36.4</td>
</tr>
<tr>
<td>Cant remember</td>
<td>259</td>
<td>25.9</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did the call prompt you to save energy?</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>90</td>
<td>9</td>
</tr>
<tr>
<td>No</td>
<td>244</td>
<td>24.4</td>
</tr>
<tr>
<td>Can't say</td>
<td>43</td>
<td>4.3</td>
</tr>
<tr>
<td>Proportion of respondents who answered this question</td>
<td>377</td>
<td>37.7</td>
</tr>
</tbody>
</table>

However, more than 25 percent of survey respondents could not recall if a follow up phone call was received after the audit. Approximately 24 percent of respondents who received a follow up call said the call prompted them to take actions to save energy. This suggests that some extension of this element of the program is warranted.

### 4.10 Annual and lifetime savings

This section provides estimates of the annual and lifetime savings that might reasonably be expected to flow from key elements of the program for the sample of program recipients who responded to the telephone survey. They are an indication rather than a definitive statement of savings.

The extrapolation of the survey results to the program as a whole should be regarded as illustrative only. There are likely to be variations in the total population of program recipients that may not have been captured in the survey sample.

#### Savings estimates

The annual savings from the retrofit kit and audits for the survey respondents (1,000 of) are shown in table 11. The overall annual savings from the audit and retrofit kit are estimated to be around $43,000 for the 1000 survey respondents. Around $23,400 in savings are derived from the installation of showerheads and around $16,900 from the installation of CFL’s. Annual savings of around $2,700 are derived from switching off appliances and turning down thermostats on hot water services.

---

1 Calculated by Sustainable Focus
Table 11: Annual savings from audit and retrofit kit for 1000 survey participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>elec saving</th>
<th>gas saving</th>
<th>CO2e saving</th>
<th>cost saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFL’s</td>
<td>1746</td>
<td>77019</td>
<td>0</td>
<td>74</td>
<td>$14,634</td>
</tr>
<tr>
<td>Showerheads</td>
<td>390</td>
<td>118069</td>
<td>845601</td>
<td>176</td>
<td>$23,413</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>203</td>
<td>3654</td>
<td>0</td>
<td>4</td>
<td>$694</td>
</tr>
<tr>
<td>Further CFL’s</td>
<td>410</td>
<td>12057</td>
<td>0</td>
<td>12</td>
<td>$2,291</td>
</tr>
<tr>
<td>Lower hot water service thermostat &amp; lag pipes</td>
<td>117</td>
<td>10238</td>
<td>65286</td>
<td>15</td>
<td>$1,910</td>
</tr>
<tr>
<td>Total</td>
<td>221037</td>
<td>910887</td>
<td>279</td>
<td></td>
<td>$42,941</td>
</tr>
</tbody>
</table>

The lifetime savings derived from the retrofit kit and audits for the survey respondents (1,000 of) are shown in table 12. The overall lifetime savings from the audit and retrofit kit for the 1000 survey respondents are estimated to be around $208,000. Around $104,000 in savings are derived from the installation of showerheads and around $95,900 from the installation of CFL’s. Annual savings of around $8,300 are derived from switching off appliances and turning down thermostats on hot water services.

Note: this doesn’t capture savings from other behaviours or actions undertaken following the audit.

Table 12: Lifetime savings from audit and retrofit kit for 1000 survey participants

<table>
<thead>
<tr>
<th>Lifetime savings</th>
<th>Lifetime</th>
<th>elec saving</th>
<th>gas saving</th>
<th>CO2e saving</th>
<th>cost saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>years</td>
<td>kWh</td>
<td>MJ</td>
<td>tonnes</td>
<td>$</td>
</tr>
<tr>
<td>CFL’s</td>
<td>7</td>
<td>539131</td>
<td>0</td>
<td>518</td>
<td>$85,734</td>
</tr>
<tr>
<td>Showerheads</td>
<td>5</td>
<td>590347</td>
<td>4228006</td>
<td>879</td>
<td>$103,835</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>2</td>
<td>7308</td>
<td>0</td>
<td>7</td>
<td>$1,347</td>
</tr>
<tr>
<td>Further CFL’s</td>
<td>5</td>
<td>60286</td>
<td>0</td>
<td>58</td>
<td>$10,160</td>
</tr>
<tr>
<td>Lower hot water service thermostat &amp; lag pipes</td>
<td>4</td>
<td>40950</td>
<td>261144</td>
<td>59</td>
<td>$6,978</td>
</tr>
<tr>
<td>Total</td>
<td>1238022</td>
<td>4489150</td>
<td>1520</td>
<td></td>
<td>$208,053</td>
</tr>
</tbody>
</table>

The annual savings from the complete Fridge Buy Back and Interest Free Loan schemes are shown in the following table 13. The annual savings estimated for the FBB is around $69,964 while estimated saving for the IFLS is around $17,480.

Table 13: Annual savings from Fridge Buy-Back and Interest Free Loan Schemes for all participants

<table>
<thead>
<tr>
<th>Annual savings</th>
<th>Number</th>
<th>elec saving</th>
<th>gas saving</th>
<th>CO2e saving</th>
<th>cost saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>#</td>
<td>kWh</td>
<td>MJ</td>
<td>tonnes</td>
<td>$</td>
</tr>
<tr>
<td>Fridge buy-back</td>
<td>728</td>
<td>368233</td>
<td>0</td>
<td>354</td>
<td>$69,964</td>
</tr>
<tr>
<td>IFLS - fridges &amp; freezers only</td>
<td>184</td>
<td>92000</td>
<td>0</td>
<td>88</td>
<td>$17,480</td>
</tr>
</tbody>
</table>
The lifetime savings from the complete Fridge Buy Back and Interest Free Loan schemes are shown in table 14: The lifetime savings estimated for the FBB is around $310,286 while estimated saving for the IFLS is around $77,523.

Table 14: Lifetime savings from Fridge Buy-Back and Interest Free Loan Schemes for all participants

<table>
<thead>
<tr>
<th>Category</th>
<th>life</th>
<th>elec saving</th>
<th>gas saving</th>
<th>CO2e saving</th>
<th>cost saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fridge buy-back</td>
<td>5</td>
<td>1841163</td>
<td>0</td>
<td>1768</td>
<td>$310,286</td>
</tr>
<tr>
<td>IFLS - fridges &amp; freezers only</td>
<td>5</td>
<td>460000</td>
<td>0</td>
<td>442</td>
<td>$77,523</td>
</tr>
</tbody>
</table>

Quantification of greenhouse and cost savings has been undertaken for the most common audit actions only. It is not possible to quantify less tangible benefits of the program, including increased awareness and flow-on effects of the program to others in the community. Costs savings include GST. The FBB and IFL Scheme are counted separately.

Note: savings from households that accessed both the Interest Free Loan Scheme and the Fridge Buy-Back Scheme to replace a fridge are counted towards IFLS savings.

Overall program savings estimates

As indicated earlier, while it is not possible to provide definitive estimates of savings for the program as a whole it is reasonable to assume that savings estimates derived from analysis of the telephone survey data would be similar for the wider program participant population (plus or minus 10 percent). This approach is applied below to calculate savings ranges for the audit and retrofit elements of the program. The total program population base used for this calculation is 10920 households. Savings ranges are rounded to the nearest thousand dollars.

Table 15 and 16 provide annual and lifetime savings range estimates for the audit and retrofit elements for the program as a whole, plus savings from the Interest Free Loan and Fridge Buy-Back Schemes.

Annual savings for all elements of the program are estimated to range between $510,000 and $603,000.
Table 15: Annual savings from all elements of the program

<table>
<thead>
<tr>
<th>Annual savings</th>
<th>Cost saving Sample</th>
<th>Cost saving range Total Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>CFL's</td>
<td>$14,634</td>
<td>$144,000 to $176,000</td>
</tr>
<tr>
<td>Showerheads</td>
<td>$23,413</td>
<td>$230,000 to $281,000</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>$694</td>
<td>$7,000 to $8,000</td>
</tr>
<tr>
<td>Further CFL's</td>
<td>$2,291</td>
<td>$19,000 to $23,000</td>
</tr>
<tr>
<td>Lower hot water service thermostat &amp; lag pipes</td>
<td>$1,910</td>
<td>$70,000*</td>
</tr>
<tr>
<td>Fridge Buy-Back Scheme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Free Loan Scheme</td>
<td></td>
<td>$17,000*</td>
</tr>
<tr>
<td>Total</td>
<td>$42,941</td>
<td>$510,000 to $603,000</td>
</tr>
</tbody>
</table>

* Cost saving ranges have not been applied to the FBB and IFL schemes as the cost saving estimate detailed in Table 13 is based on all participants rather than a sample of participants.

Lifetime savings from all elements of the program are estimated to range between $2.4 million and $2.9 million.

Table 16: Lifetime savings from all elements of the program

<table>
<thead>
<tr>
<th>Lifetime savings</th>
<th>Lifetime years</th>
<th>Cost saving Sample</th>
<th>Cost saving range Total Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td></td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>CFL's</td>
<td>7</td>
<td>$85,734</td>
<td>$843,000 to $1,029,000</td>
</tr>
<tr>
<td>Showerheads</td>
<td>5</td>
<td>$103,835</td>
<td>$1,029,000 to $1,247,000</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>2</td>
<td>$1,347</td>
<td>$13,000 to $16,000</td>
</tr>
<tr>
<td>Further CFL's</td>
<td>5</td>
<td>$10,160</td>
<td>$100,000 to $122,000</td>
</tr>
<tr>
<td>Lower hot water service thermostat &amp; lag pipes</td>
<td>4</td>
<td>$6,978</td>
<td>$69,000 to $84,000</td>
</tr>
<tr>
<td>Fridge Buy-Back Scheme</td>
<td></td>
<td>$310,000*</td>
<td></td>
</tr>
<tr>
<td>Interest Free Loan Scheme</td>
<td></td>
<td>$78,000*</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$208,053</td>
<td>$2,442,000 to $2,886,000</td>
</tr>
</tbody>
</table>

* Cost saving ranges have not been applied to the FBB and IFL schemes as the cost saving estimate detailed in Table 14 is based on all participants rather than a sample of participants.

4.11 Audit recommendations

During the energy audit process, the auditors identified actions which would lead to energy savings and made recommendations to householders. Approximately 84 percent of survey respondents who received recommendations from auditors said they could recall what the main recommendations were. All results are summarised in table 17:
Table 17: Whether householder recalled Auditor recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>N</th>
<th>Percent of responses*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch off appliances at the plug</td>
<td>218</td>
<td>17.9</td>
</tr>
<tr>
<td>Install/replace window or door draught seals</td>
<td>162</td>
<td>13.3</td>
</tr>
<tr>
<td>Replace fridge/freezer</td>
<td>114</td>
<td>9.4</td>
</tr>
<tr>
<td>Turn down water heater thermostat</td>
<td>97</td>
<td>8.0</td>
</tr>
<tr>
<td>Replace incandescent globes</td>
<td>87</td>
<td>7.1</td>
</tr>
<tr>
<td>Adjust fridge/freezer thermostat/t</td>
<td>71</td>
<td>5.8</td>
</tr>
<tr>
<td>Get rid of 2nd fridge(s)</td>
<td>69</td>
<td>5.7</td>
</tr>
<tr>
<td>Insulate/flag hot water pipes</td>
<td>62</td>
<td>5.1</td>
</tr>
<tr>
<td>Install pelmets</td>
<td>57</td>
<td>4.7</td>
</tr>
<tr>
<td>Replace curtains/blinds</td>
<td>52</td>
<td>4.3</td>
</tr>
<tr>
<td>Use cold water for washing machine</td>
<td>41</td>
<td>3.4</td>
</tr>
<tr>
<td>Service fridge/freezer</td>
<td>39</td>
<td>3.2</td>
</tr>
<tr>
<td>Adjust air-con thermostat</td>
<td>36</td>
<td>3.0</td>
</tr>
<tr>
<td>Dust elements on back of fridge/freezer</td>
<td>30</td>
<td>2.5</td>
</tr>
<tr>
<td>Install/replace/use external shading</td>
<td>27</td>
<td>2.2</td>
</tr>
<tr>
<td>Use different heater/cooler</td>
<td>17</td>
<td>1.4</td>
</tr>
<tr>
<td>Get insulation in the roof</td>
<td>15</td>
<td>1.2</td>
</tr>
<tr>
<td>Close curtains when using air-conditioning</td>
<td>14</td>
<td>1.2</td>
</tr>
<tr>
<td>Use air-conditioning instead of bar</td>
<td>9</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>1217</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Refers to the percent of responses within this question set

The most common recommendations recalled include switching appliances off at plugs; install/replace window or door draught; replace fridge/freezer; turn down water heater thermostat and replace CFLs.

4.12 Sustainable behaviour changes

Whilst it is difficult to evaluate which behaviour changes were sustainable and most cost effective in the absence of a longitudinal study of the respondents, it is possible to indicate which changes were most commonly implemented. This informs an understanding of what behaviours or actions are most likely to be adopted by participants in future.

Based on a review of the recommendations made by the auditors the most common behaviours or actions were:

- switch off appliances at plug.
- install/replace window or door draught.
- replace CFLs.
- turn down water heater thermostat to minimum of manufacturer specifications.
- adjust fridge/freezer thermostat.
- replace fridge/freezer.
- insulate/flag hot water pipes.
• dispose of second fridge.
• use cold water for washing machine.
• adjust air conditioner thermostat.

Program participants appear to have followed audit recommendations closely and implemented the most commonly recommended items.

4.13 Recommendations rarely acted on and why not

Recommendations from auditors that were rarely acted upon included:

• service washing machine.
• install AAA-rated shower head.
• cook with gas oven or microwave to reduce greenhouse emissions
• use different heater/cooler only heat or cool rooms needed.
• install/replace/use external shading.
• use air conditioner instead of bar heater, where bar heater being used to heat an area.
• close curtains when using air conditioner.

Participants were asked why recommendations were not implemented. The most common reasons given for not implementing recommendations were:

• it was too costly to pay someone to do it.
• I did not have the expertise to do it myself.
• getting older.
• not sure we would get the value.

The full range of responses are detailed in table 18.

Table 18: Reasons for not implementing recommendations

<table>
<thead>
<tr>
<th>Reason</th>
<th>N</th>
<th>Percent of responses*</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was too costly to pay someone to</td>
<td>22</td>
<td>18.2%</td>
</tr>
<tr>
<td>I didn’t have enough time to do it</td>
<td>6</td>
<td>5.0%</td>
</tr>
<tr>
<td>I haven’t got the expertise to do it</td>
<td>15</td>
<td>12.4%</td>
</tr>
<tr>
<td>Didn’t know who to call</td>
<td>4</td>
<td>3.3%</td>
</tr>
<tr>
<td>Getting older, not sure we’d get the value</td>
<td>9</td>
<td>7.4%</td>
</tr>
<tr>
<td>Other reason</td>
<td>65</td>
<td>53.7%</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

* Refers to the percent of responses within this question set

Focus group participants revealed that many of the recommendations that were rarely or not acted on were costly to implement or were not implemented because the participants were in Housing Trust or private rental properties. Many were not in a financial position to buy a microwave or gas oven, install external shading, install air-conditioning to replace bar radiators, or to install
curtains. Renters were reluctant to install some of these items if they were likely to be moving in the future.

### 4.14 Financial hardship

The program has had a significant impact on reducing defaults on bill payments, lowering levels of disconnections and lowering levels of presentation to welfare and health sector organisations. However, it should be noted that a large proportion of respondents did not report difficulties with bill payments and disconnections before the program began.

*Impact on energy bills*

The program has assisted many respondents to pay their energy bills. Table 19 indicates that more than 25 percent of respondents reported having difficulties paying energy bills before taking part in the program. Fewer than 5 percent reported that they were experiencing difficulties with energy bills after receiving the program. Most of this group had experienced difficulties with bills before taking part in the program.

**Table 19: Proportion of respondents with difficulty paying energy bills before and after the program**

<table>
<thead>
<tr>
<th></th>
<th>N (/1000)</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulties paying bills before the program</td>
<td>256</td>
<td>25.6</td>
</tr>
<tr>
<td>Difficulties paying bills after the program</td>
<td>45</td>
<td>4.5</td>
</tr>
<tr>
<td>Difficulties paying bills before and after the program</td>
<td>34</td>
<td>3.4</td>
</tr>
<tr>
<td>Difficulties paying bills only after the program</td>
<td>9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

The program has made a significant contribution to reducing financial hardship related to energy bills for those program participants who were experiencing difficulties paying bills before the program.

Table 20 indicates that approximately 40 percent of the survey respondents indicated that the audit program had made a noticeable difference to their energy bill, whereas fewer than 30 percent said that it had not. Around 30 percent were not sure that the audit had made a difference to their energy bills.

**Table 20: Has the program made a noticeable difference to your electricity bill?**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>399</td>
<td>39.9</td>
</tr>
<tr>
<td>No</td>
<td>294</td>
<td>29.4</td>
</tr>
<tr>
<td>Unsure</td>
<td>307</td>
<td>30.7</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Survey respondents were asked questions about defaults on bills, disconnections and presentations to welfare agencies before and after they took part in the program.

Table 21 provides a breakdown of the types of difficulties that the survey respondents experienced before the energy check took place. Around 3 percent of respondents reported needing to seek financial assistance from a welfare organization to pay for their bill before entering the program and fewer than 3 percent reported needing to seek financial assistance from a friend or family member to pay for their bill. More than 10 percent did seek financial assistance or extended time to pay bills from suppliers. Less than 1 percent had defaulted on a bill before taking part in the program and only 0.4 percent had been disconnected while 0.6 percent had an energy debt with a retailer. Just over 2 percent had established a plan with Centrelink and more than 12 percent had established a payment plan with their retailer. Only 3 percent had changed retailers since deregulation.

Table 21: Types of difficulties encountered with paying bills (multiple response question)

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>N</th>
<th>Percent of responses*</th>
<th>Percent of Cases**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sought financial assistance from a friend / family</td>
<td>24</td>
<td>2.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Sought financial assistance or time from a supplier</td>
<td>103</td>
<td>9.4</td>
<td>10.3</td>
</tr>
<tr>
<td>Sought financial assistance from a welfare agency</td>
<td>34</td>
<td>3.1</td>
<td>3.4</td>
</tr>
<tr>
<td>Established payment plan with Centrelink</td>
<td>23</td>
<td>2.1</td>
<td>2.3</td>
</tr>
<tr>
<td>Defaulted on a electricity or gas bill</td>
<td>9</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Been disconnected</td>
<td>4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Have a electricity or gas debt with retailer</td>
<td>6</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Establish payment plan with retailer</td>
<td>128</td>
<td>11.7</td>
<td>12.8</td>
</tr>
<tr>
<td>No, have not experienced any of these</td>
<td>725</td>
<td>66.5</td>
<td>72.5</td>
</tr>
</tbody>
</table>

* Shows the percent of response to a multiple response question based on the total responses to the question set.  
** shows the percent of response to a multiple response question based on the number of cases (respondents) in the total sample population

Respondents who implemented recommendations from the audit were asked if they had experienced any change in their situation. Only 0.5 percent of these respondents reported needing to seek financial assistance from a welfare organization to pay for their bill. Less than 1 percent reported needing to seek financial assistance from a friend or family member to pay for their bill. More than 3 percent sought financial assistance or extended time to pay for bill from supplier after taking part in the program. Only 0.1 percent had defaulted on a bill, none reported being disconnected and 0.2 percent had an energy debt with a retailer.
4.15 Comfort and health

A major objective of the program was to improve the comfort levels of low income households and contribute to improved health as a result of this. Table 22 indicates that approximately 79 percent of survey respondents indicated that they were able to afford to heat and cool their living rooms to a comfortable level before their audit while 20 percent indicated that they were not able to.

Table 22: Are you currently able to cool or heat your home to a comfortable level

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>792</td>
<td>79.2</td>
</tr>
<tr>
<td>No</td>
<td>192</td>
<td>19.2</td>
</tr>
<tr>
<td>Can’t say/refused</td>
<td>16</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Survey respondents were asked if since the audit was undertaken whether there had been any improvements implemented that had increased their comfort level in their living room. Table 23 indicates that more than 27 percent of survey respondents said improvements had increased their comfort level. However, more than 70 percent said their living room comfort had not changed since the audit. Less than 1 percent said that their comfort levels had reduced since the audit.

Table 23: Since the energy check have you done anything that has improved the comfort level in living area

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>277</td>
<td>27.7</td>
</tr>
<tr>
<td>No - comfort stayed the same</td>
<td>705</td>
<td>70.5</td>
</tr>
<tr>
<td>No - decreased comfort</td>
<td>7</td>
<td>.7</td>
</tr>
<tr>
<td>Can’t say/refused</td>
<td>11</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Insights into the relationship between improvements in comfort and increased health benefits were ascertained through responses from focus group participants. Focus group participants who reported increased comfort levels suggested that being more comfortable was good for their health. Lower power bills were also associated with reduced stress. Some focus group members saw the audit process itself as having an affirmative therapeutic benefit. These participants said they were aware of the need to save energy and had implemented measures before the audit. For them the audit was an affirmation that they were being socially responsible.
It should be noted that improvements in health from a program that has only been in place for a short period are difficult to assess beyond immediate client perceptions since the health benefits from improved comfort levels are likely to become manifest over time. Improvements in comfort, health and welfare should be assessed through a longitudinal study.

4.16 Overall satisfaction with the service and audit

As an indicator of the extent to which people were satisfied with the scheme survey respondents were asked if they had recommended the scheme to family and/or friends. Table 24 indicates that more than 80 percent of survey respondents had recommended the program to family/or friends. Furthermore, over 70 percent said they had encouraged others to implement energy efficient practices after the audit. These results suggest that the survey respondents were very satisfied with the program as the following table details.

Table 24: Would you recommend the program to others/encourage others to join?

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend the program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>805</td>
<td>80.5</td>
</tr>
<tr>
<td>No</td>
<td>190</td>
<td>19.0</td>
</tr>
<tr>
<td>Can’t say / Refused</td>
<td>5</td>
<td>.5</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
<tr>
<td>Encourage others to join the program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>725</td>
<td>72.5</td>
</tr>
<tr>
<td>No</td>
<td>265</td>
<td>26.5</td>
</tr>
<tr>
<td>Can’t say / Refused</td>
<td>10</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Most participants who attended the focus groups also spoke very favourably about the audit and the auditors. Participants commented on the friendliness of auditors, the opportunity to learn something new, their increased awareness of how to save energy and the reassurance the audit brought them about the appropriateness of their own energy saving efforts. Most appreciated receiving the retro fit items although some did not need the items as they had already installed them.

Other participants raised concerns with inconsistencies in the service levels provided by auditors. Some auditors spent less than fifteen minutes on a home audit whereas others spent one and a half hours. Discussions with the auditors indicated that shorter audits took place when homes were deemed to be energy efficient. Auditors also indicated that they experienced some aggression or hostility from participants in some households which discouraged auditors from spending time in these participants’ homes.
Some participants also expressed concerns that the response time for an audit to take place was slow. Most participants said response times were three to four weeks. In this context auditors reported that they were often under pressure to respond to requests for audits. Volunteer auditors found the expectation that they undertake five 1.5 hour home audits in a day onerous and difficult to achieve.

Around 97 percent of survey respondents said that the energy advisors knowledge was satisfactory to conduct the energy check, and more than 98 percent indicated they were either satisfied or very satisfied with the quality of the service provided by the auditor. This demonstrates a very high level of satisfaction with the service provided.

4.17 Employment

A subsidiary objective of the program was the generation of employment opportunities. The program generated 13 full-time equivalent (FTE) paid positions and 2 FTE voluntary positions. Table 25 summarises the employment generated by each Service Provider.

Table 25: Employment generated by program by Service Provider

<table>
<thead>
<tr>
<th>Service Providers</th>
<th>Paid FTE</th>
<th>Voluntary FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniting Care Wesley Port Pirie</td>
<td>1.22</td>
<td>.37 FTE</td>
</tr>
<tr>
<td>Uniting Care Wesley Bowden</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Uniting Care Wesley Adelaide</td>
<td>4.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Salvation Army</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>Lutheran Community Care</td>
<td>2.7</td>
<td>4</td>
</tr>
<tr>
<td>Anglicare</td>
<td>3.1</td>
<td>2</td>
</tr>
</tbody>
</table>

There is anecdotal evidence that the program has also provided some limited further employment opportunities both paid and voluntary.

Examples include:

- One placement from a TAFE counseling course received casual work
- Youth Conservation Core Program – energy efficiency component – one participant received employment at the Office of Sustainability.
- Volunteer auditors became paid auditors.
- People who were involved in the free home auditing Energy Friends program obtained employment as facilitator roles within the program.

Others were able to move on to permanent roles within their organisations as a result of experience obtained from their work with this program.
4.18 Service Delivery

Focus group participants were asked to comment on the process of the audit to enable evaluation of the quality of service delivery. Most participants felt the audit process was systematic and included a thorough check of electrical appliances and assessment of the whole house. However in discussion groups with the evaluation team some focus group participants raised concerns with:

- the length of the audit varying from 15 minutes to 2 hours.
- some audits only involved a retrofit with no recommendations given.
- not all participants received all the retrofit items.
- some auditors did not assess the whole house.
- not all participants were told about the FBB or the IFLS (under the program these items, and showerheads, were only discussed if they were applicable to the household).
- participants were not always informed that showerheads were available, and when they were not offered one they were not told why they did not require one.

In some cases there appears to have been some misunderstanding about energy efficiency strategies. For example one focus group participant said that they were advised that using hot water in washing machines would not increase their energy bill. Inconsistencies in the quality of the service the auditors were providing were also raised by a number of the key informants interviewed as a part of the evaluation. This however must be seen in the context of the very high level of satisfaction that program participants expressed about the auditors and the program in general.

4.19 Flow on benefits

In achieving its objectives the program has generated significant flow on benefits. Not least of these are lasting annual and lifetime savings in energy costs and carbon dioxide emissions as discussed above.

But perhaps more importantly the program appears to have had a strong flow on benefit in raising awareness of environmental issues and affirming energy saving activities. The survey respondents and focus group participants made it clear that their awareness of environmental issues and the need to save energy had been heightened by the program.

Many indicated that they had encouraged others to implement energy saving measures in their households and had taken additional measures themselves since receiving their audit. Still others who had implemented energy saving measures before entering the program said they were reassured by the audit that they were doing the right thing and were encouraged to continue implementing energy saving measures.
Whilst it is difficult to measure the flow on effects of these processes, their long-term impact is likely to be considerable and might multiply many times the direct savings in energy costs and carbon emissions calculated from the actions of the survey respondents in this study.

Likewise there are likely to be flow on benefits in terms of increased comfort levels in households from the multiplier effect on community health.

The delivery model itself is also likely to prove a model for cooperation between the Energy Division and CBWOs, which might be replicated to good effect in other areas.
5.0 Enhancing the Program

This section discusses a number of issues arising from the evaluation related to program design and delivery. Recommendations for enhancing the design and delivery of the program are made in the following areas:

- Mode of engagement
- Targeting and promotion
- Training of Auditors
- Methods of motivating energy saving actions
- General issues

5.1 Mode of engagement

A collaborative service delivery model was adopted involving the Energy Division, CBWOs and a specialist contractor. Tenders were sought by the Energy Division from community based welfare organisations for the delivery of energy efficiency services, specifically energy audits of low income households. Successful tenderers were contracted to deliver a predetermined number of energy audits to meet the overall program target of 10,000 audits.

The strategy to work closely with the community sector in the delivery of the program has been a particular strength of the program. Notwithstanding the need for better targeting of the program the Service Providers have demonstrated the capacity to deliver and exceed the required number of households sought by Energy Division. This is an impressive achievement, providing a sound basis for the successful delivery and future targeting of the program.

A positive working relationship between Energy Division and the Service Providers is evident from the feedback from key stakeholders. There was evidence of goodwill on all sides, which enabled adjustments to be made to the program as required and aided the effective delivery of the program. A high level of commitment was evident to the objectives of the program by both the State Government and the Service Providers.

Feedback from key informants and program participants suggests that the program would have benefited from a more flexible approach to funding to provide scope for innovation and trialing of different methods to reach the target population. An emphasis on performance and limitations on the discretion of the Service Providers is likely to inhibit innovation and experimentation.
5.2 The services

The energy efficiency services were delivered by a range of Service Providers selected through competitive tender. While Energy Division provided considerable detail in the tender documentation about the services to be delivered there was considerable discretion available to Service Providers to determine how best to deliver the required services. Three different models of service delivery appear to have emerged from this process. They include:

- The CBWO/private sector partnership between Anglicare and Fieldforce;
- The paid auditor approach (UCWA, UCWB, SA)
- The volunteer model (LCC, UCWPP)

The internal evaluation of the Energy Friends program by Service Providers discussed the relative merits of different models of service delivery. The use of paid auditors was recommended by one of the Service Providers. The evaluation team believes that this approach warrants serious consideration as service quality and consistency is likely to be maximized through the use of paid auditors with relevant qualifications, skills and experience. Employment of a team of auditors on an ongoing basis would provide greater continuity and consistency in service delivery.

The program experienced some difficulties in the early stages refining protocols and procedures, particularly in relation to the FBBS and ILFS. The internal review of the program by the Service Providers suggests that program participants experienced some confusion and concern. Concerns related to the length of time required to develop a database, confusion over promotional issues and Energy Division’s human resources available to support the program. These matters appear to have been resolved satisfactorily by Energy Division and the Service Providers.

One lesson from this experience is that it is crucial that each element of a program be piloted and evaluated before fully implemented. The processes applied to the development of the energy audit scheme act as a benchmark for the program. The energy audit scheme was piloted, evaluated and adjusted before it was fully implemented. A similar approach should be taken in relation to the FBB, IFLS and all other elements of the program. More broadly a process of continuous improvement should be adopted involving the provision of evaluative feedback from Service Providers, program participants, Energy Division and key stakeholders.

There is a strong case for considering expanding the range of services available through the program to provide a high level of relief to that proportion of low income households experiencing difficulties paying their bills or dealing with disconnection. This might include providing grants to householders or tax rebates to landlords for insulation, shading, heating and cooling. It may also include working with the Housing Trust to implement an energy efficiency retrofit and new housing program.
The following recommendations are made in relation to the services delivered.

1. A more flexible approach to the delivery of the services and products offered should be considered.
2. Consideration should be given to the establishment of a team of full-time professional auditors employed by Energy Division. The team would meet on a regular basis to share experience and exchange knowledge and skills. Each auditor would support a regional network of key stakeholders including CBWOs, local government, State Government and Federal Government organisations. Working closely with these organisations the auditors would be responsible for the development of regional strategies on an annual basis which outline key objectives and include targets and key performance indicators.
3. Highly vulnerable groups should be offered a more comprehensive service, which might include a full retrofit of their homes.
4. A quality assurance scheme should be developed to ensure all program participants receive the same quality and consistency of service from their home visit.
5. The Fridge Buy-Back Scheme should be discussed in all audits and made available in all regions. Scrapped fridges in good order should be assessed for energy efficiency and those that meet an agreed standard should be placed in a “Fridge Bank” under the auspices of the Service Providers to be made available at no cost to low-income households currently without a fridge and unable to purchase one.
6. The Interest Free Loan Scheme is understood to be cumbersome and expensive to administer. Moreover applicants have complained about onerous paperwork and red-tape.
   a. Consideration should be given to replacing IFLS with a grant scheme for low-income earners to reduce administration costs.
   b. Consideration should be given to empowering auditors to undertake eligibility assessments for the IFLS grant when auditing households.
   c. If the IFLS is retained, or a grant scheme introduced, the range of items to be purchased should be broadened and made more flexible to include items such as energy efficient air-conditioners where such items will be used to replace energy inefficient electric or oil heaters and improve the comfort levels and health of low income households.
7. The program should be expanded to include water audits.
8. Consideration should be given to expanding the items audited to include door seals and roof insulation.
9. The financial, health and welfare benefits of the program should be assessed through a longitudinal study of the impact of the program over time.
10. There be a single application form with a single address and an officer to sort and forward applications to Service Providers to reduce double handling.
11. Energy Division and the Service Providers develop standardized forms and data collection processes and a single data collection office to facilitate evaluation and improvement of the program.
12. Given the proportion of showerheads not installed by householders, options available to householders to install showerheads should be identified.

5.3 Targeting and promotion

The program sought to reach low income households, particularly those experiencing financial hardship. As indicated earlier the program has been successful in reaching a high proportion of low income households and a significant proportion of these were experiencing financial hardship related to energy prices. A weakness of the program appears to be the lack of an overall promotional strategy that clearly delineates between what is best undertaken centrally and what is most effectively done at a regional level. The challenge for Energy Division and Service Providers is to extend the reach of the program to include a higher proportion of households experiencing disconnections and having difficulty paying their electricity bills.

The program relied on Service Providers to use their network of contacts, including other welfare organisations, relevant government departments and hardship arms of electricity retailers to generate referrals for audits. The program was promoted using a number of different methods. Energy Division provided the following promotional materials to Service Providers:

- Promotional postcards
- Promotional posters
- Information leaflets

The program received considerable prominent and largely positive newspaper coverage. Some criticism of delays in implementation of the program were reported. The net effect of the coverage is that it appears to have considerably raised awareness of and demand for the program. The newspaper coverage is summarised in table 26:

Table 26: Newspaper coverage of the program

<table>
<thead>
<tr>
<th>NEWSPAPER</th>
<th>TITLE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Advertiser</td>
<td>Energy audit to cut power bills</td>
<td>June 3, 2003</td>
</tr>
<tr>
<td>Sunday Mail</td>
<td>Gift plan to cut bills</td>
<td>November 16, 2003</td>
</tr>
<tr>
<td>The Advertiser</td>
<td>Energy audit loses its steam</td>
<td>May 10, 2004</td>
</tr>
<tr>
<td>The Advertiser</td>
<td>Elderly forced to wait for power check</td>
<td>May 11, 2004</td>
</tr>
<tr>
<td>The Courier</td>
<td>Energy friends cut costs for families</td>
<td>2004</td>
</tr>
<tr>
<td>Southern Times</td>
<td>Abi helps save for the environment</td>
<td>June 16, 2004</td>
</tr>
<tr>
<td>Sunday Mail</td>
<td>Power savers no one wants</td>
<td>January 16, 2005</td>
</tr>
<tr>
<td>Coober Pedy Times</td>
<td>Pay less on your electricity bills</td>
<td>March 24, 2005</td>
</tr>
</tbody>
</table>
The program was promoted in a range of newsletters summarised in table 27.

**Table 27: Newsletter coverage of the program**

<table>
<thead>
<tr>
<th>NEWSLETTER</th>
<th>TITLE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity week</td>
<td>SA Govt lambasted for “door snake” energy audit program</td>
<td>12 May 2004</td>
</tr>
<tr>
<td>Adelaide Legacy Newsletter</td>
<td>Want help reducing your energy bills</td>
<td>August 2004</td>
</tr>
<tr>
<td>Lutheran Community Care Newsletter</td>
<td>Energy friends program moving forward</td>
<td>November 2004</td>
</tr>
<tr>
<td>Lutheran Community Care Newsletter</td>
<td>Energy friends program shows no signs of slowing down</td>
<td>April 2005</td>
</tr>
<tr>
<td>Southern Metro Energy Friends Project Newsletter</td>
<td>Energy Friends</td>
<td>April 2005</td>
</tr>
<tr>
<td>Green Agenda – City of Marion</td>
<td>Energy savers make cool friends</td>
<td>Autumn 2005</td>
</tr>
<tr>
<td>Metropolitan Domiciliary Care Newsletter</td>
<td>Are you on a low-income and want help reducing our bills</td>
<td>Winter 2005</td>
</tr>
<tr>
<td>Country Womens Association Newsletter</td>
<td>Need help reducing your energy bills?</td>
<td>July 2005</td>
</tr>
<tr>
<td>Tenant link – Housing Trust</td>
<td>Want help reducing your energy bills?</td>
<td>July 2005</td>
</tr>
<tr>
<td>SA Senior</td>
<td>Want help reducing your energy bills?</td>
<td>December 2005</td>
</tr>
<tr>
<td>Meals on Wheels</td>
<td>Want help reducing your energy bills?</td>
<td>December 2005</td>
</tr>
</tbody>
</table>

It became clear early in the implementation of the program that recruiting participants from referrals was not going to generate the number of participants required for the program. A variety of different reasons for this problem were identified by Service Providers and Energy Division. Some of these reasons were:

- The referral relationship/network took time to build.
- High turn over of staff and volunteers
- Many clients had no phones, which made it hard to make appointments.

Take up of the program appears to have been driven by other factors besides referrals from the Service Provider networks, most notably by friends and neighbors and media stories. This is confirmed by the survey findings which indicate that a large number of people learnt about the program from articles in the Messenger and the Sunday Mail. Figure 6 summarises how the survey respondents heard about the service.
A large number of respondents learnt about the program from family members, friends or neighbors. The most common sources of information about the program were the Messenger Newspaper, church or religious centres, letters sent directly to the respondent, community groups and information sessions. Relatively few respondents reported hearing about the service from welfare groups or health services.

The internal review by Service Providers suggested that the most successful strategies used to promote the program were information sessions to community groups, the use of printed and promotional materials, the building of referral relationships with Service Providers (both government and non-government) and word of mouth 9. Consultations with the Service Provides also indicated that letter box drops proved to be effective. The least successful included referrals from non-government agencies (Anglicare SA et al 2005:8).

To ensure that the program is providing support to a higher proportion of those experiencing difficulty paying bills and dealing with disconnection it will be necessary to adopt the most effective promotional and referral methods. The most effective methods appear to have been newspaper articles, newsletters and direct mail supplemented by the use of community networks and the building of referral relationships with both non-government and government Service Providers.

There is a need to develop a comprehensive and integrated communications strategy for the program which specifies those elements of the strategy that
are most efficiently and effectively undertaken centrally through Energy Division and those strategies that are likely to be most effectively undertaken at the local level by Service Providers.

A number of focus group participants wished to recommend the program to friends outside of their local area but did not know who to refer them too. A central point of contact for the program for potential participants appears warranted.

The following recommendations are made in relation to targeting and promotion.

13. Specific modes of engagement such as memorandums of understanding should be developed by Energy Division and the Service Providers with key agencies including the SA Housing Trust, SA Water, Energy retailers and Centrelink.

14. Flexibility in funding agreements should be allowed to enable Service Providers to trial different methods of engaging vulnerable groups with particular needs, i.e. different cultural groups and NESB communities.

15. Information on the program is currently only available in English. Program information should be provided in other languages to reach people from a non-English speaking background.

16. The program should be given a single name for use by all Service Providers to provide clarity to consumers.

17. There be a single 1800 phone contact where client details can be captured and sent to the relevant Service Provider.

18. An enhanced web-site should be established by Energy Division, devoted to providing information on the program, how to contact Service Providers and to provide information on energy efficiency including case studies of the program in action in South Australia.

19. The development of a state wide communication and promotional strategy to broaden public awareness of the program.

20. Funding should be available support the development of program specific materials and advertising including:
   • information kits for libraries, local government offices, welfare organisations and NGOs;
   • community education forums;
   • advertising in statewide and community media.

21. Care should be taken to promote the program as a public service rather than as a welfare program, to help facilitate the engagement with vulnerable people wary of intrusion by welfare organisations.

5.4 Training and engagement of Auditors

A requirement of the program was that all auditors receive training in the energy audit process. Energy Division provided energy training to around 165 people over the February 2004 - August 2005 period. The Training was provided to small groups of attendees in metropolitan and regional locations throughout the State. The program was based on the Energy Friends – Home Evaluation of the Energy Efficiency Program for Low Income Households 48
Energy Auditing Course prepared by Energy SA in 2003 (Energy SA 2003). The aims of the course are:

- To identify the key aspects of homes and householder activities that relate to energy use.
- To identify the most effective ways to reduce energy use in these.
- To introduce a home energy auditing methodology and relevant tools.
- To develop skills in conducting home energy audits and motivating households to take energy efficiency action.
- To draw on relevant experiences from participants and give them confidence in their ability to conduct a successful home energy audit.

The course is delivered by experienced trainers and is one and a half days in duration. It is competency based, cleverly modularised and appears comprehensive in its coverage. The internal review of the program by Service Providers indicated that participants “felt positive about the way the training was managed” (Anglicare SA 2005:6).

Participants are provided with a number of important resources to support them as auditors. This includes:

- Retrofitting Guide for Showerheads and CFLs
- Energy Auditors Guide to the PowerMate
- PowerMate – an electronic device to measure the energy efficiency of appliances.

The training provided a firm grounding for participant auditors. In most cases there was no ongoing training for auditors, and limited or no training to deal with some issues that have been confronted during household visits. Auditors have been confronted by hostility in some cases, witnessed child abuse and animal cruelty, visited unsanitary or unsafe households and received requests for help with health and welfare issues. While some training in dealing with difficult situations has been provided as part of the energy auditors formal training, consideration needs to be given to some specific training on how to deal with conflict and knowledge of appropriate avenues of referral is warranted.

Stakeholders report some inconsistency in the provision of audits that is likely to be a function of staff turnover and using a combination of paid staff and volunteers. Consideration should be given to establishing a pool of professional auditors to improve the consistency and quality of the audits and the service as a whole.

The following recommendations are made in relation to the training and engagement of auditors.

22. Training for the auditors should be extended to include: further technical training to cover:
• how to conduct water audits;
• dealing with abuse and neglect;
• occupational health and safety - auditors have reported entering unsafe and unhygienic homes;
• conflict management – auditors have reported being threatened and screamed at by program participants;
• social inclusion training - auditors have encountered frequent requests for referrals to other welfare services from program participants;
• cultural awareness training – auditors have reported issues engaging with Indigenous communities and migrant communities.

23. An auditor network should be established to provide peer support, training and information sharing among auditors.

24. Consideration should be given by Energy Division to employing and training a pool of full-time professional energy efficiency auditors to work collaboratively with CBWOs in the delivery of a regionally based program.

5.6 Methods of motivating energy saving actions

An important aim of the program has been to motivate households to embrace, implement and sustain energy saving actions. Verification, affirmation and a commitment to saving the environment appear to have been as motivational for participants as receiving an audit, two free light bulbs, showerhead and a draught excluder.

The following recommendations are made in relation to motivating energy saving actions.

25. Motivational methods should be broadened to include community education and publicity campaigns that have a focus on saving energy and helping the environment.

26. To assist the motivation of participants in severe financial crisis to save energy, a referral service to appropriate welfare and counseling services should be instituted by each Service Provider if these are not already in place.

27. Auditors should be trained to make referrals and to provide information on energy efficiency services available.
References


Appendix 1: Survey Instrument

Questions for the survey instrument were developed by the Australian Institute for Social Research at the University of Adelaide in consultation with Energy Division and the six Service Providers. The instrument was modified by Harrison Research for the purpose of delivering a CATI telephone survey. The questions asked were:

Section A: Background

Q1A  What is the postcode of the town or suburb that you live in?

Q2A  What is the name of the town or suburb that you live in, or the closest town, if you live in a country area?

Q3A  How did you hear about the free home energy check service? 
1. Pamphlets at local community centre
2. Through church/religious centre
3. Through welfare groups
4. Through health service
5. Through Legacy group
6. Through other community group
7. Family/friends/neighbours/word of mouth
8. Retirement village word of mouth
9. Messenger/local paper
10. Advertiser/ Sunday Mail
11. Presentation or information session
12. Radio
13. Local politician
14. Letter/leaflet sent to me/us
15. Other

Q4A  What motivated you to take-up the energy check service?
1. High power bills/ cost of energy
2. Needed to save money
3. Check equipment efficiency
4. Check not wasting energy
5. Reduce energy usage to help environment
6. Check getting best value for money
7. Get free light globes
8. Other

Section B: The Energy Check

Q1B The next questions relate to the giveaway kit items given to you by the advisor during the energy check. What free items did you receive from the energy advisor:

1. Energy saving globes
2. Shower head
3. Door snake
4. Unsure

Q2B Were the energy saving globes installed by the advisor or left behind?

1. Installed
2. Left behind
3. Can't say /refused
Q3B Have the globes been installed:

1. Yes - by me
2. Yes - by someone else
3. No
4. Can't say /refused

Q4B What's prevented you from installing the globes?

1. I didn't have enough time to do it myself
2. I didn't have the expertise or ability to do it myself
3. It was too costly to pay someone to do it
4. I didn't know who to call to install the item
5. Didn't want to waste old globes
6. Just haven't got around to it
7. Other reason

Q5B Are both globes still installed?

1. Yes
2. No - one no longer in
3. No - both no longer in

Q6B Why not?

1. Globe failed
2. Didn't like the look
3. Didn't like the colour or light
4. Not bright enough
5. Other reason

Q7B Were you satisfied with the quality of the globes?

1. Yes
2. No

Q8B Do you have any other comments on the globes?

1. Not bright enough
2. Get brighter when warmed up
3. Takes too long to get bright
4. Get static on radio when lights on
5. Last longer than the old ones
6. Have bought/ will buy more
7. Flickers/flashes when turned off
8. Other

Q9B Was the showerhead installed by the advisor or left behind:

1. Installed
2. Left behind
3. Can't say /refused

Q10B Has the showerhead been installed:

1. Yes - by me
2. Yes - by someone else
3. No
4. Can't say /refused
Q11B What's prevented you from installing the showerhead?

1. I didn't have enough time to do it myself
2. I didn't have the expertise or ability to do it myself
3. It was too costly to pay someone to do it
4. I didn't know who to call to install the item
5. Other reason

Q12B Is the showerhead still installed?

1. Yes
2. No

Q13B Why not?

1. Gave a poor quality shower
2. Made the water flow hot and cold
3. Other reason

Q14B Were you satisfied with the quality of the showerhead?

1. Yes
2. No

Q15B Do you have any other comments in regard to the showerhead?

1. Water pressure poor
2. Water pressure poor but another water saving brand installed since is okay
3. Saves both water and energy
4. Save water but not sure if it saves energy
5. It leaks
6. Don't really like it but if it saves money and energy, that's okay
7. Effective /does the job
8. Other

Q16B How satisfied were you that these energy saving giveaways helped you to conserve energy:

1. Very satisfied
2. Satisfied
3. Neither satisfied nor unsatisfied
4. Unsatisfied
5. Very unsatisfied
6. Can't say / Refused

Q17B The next few questions are about what happened during and after the actual energy check. Did your energy advisor make any recommendations during the energy check?

1. Yes
2. No
3. Can't say / refused

Q18B Can you recall up to three recommendations from the energy check?

1. Yes
2. No
3. Can't say / refused
Q18BA What were they?

1. Replace fridge/freezer
2. Replace washing machine
3. Replace incandescent globes with compact fluorescent lamps
4. Replace hot water service with 5-star gas, heat pump or solar
5. Service fridge/freezer
6. Service washing machine
7. Dust elements on back of fridge/freezer
8. Get rid of 2nd fridge(s)
9. Use cold water for washing machine
10. Turn down water heater thermostat
11. Adjust fridge/freezer thermostat/temperature
12. Adjust air-con thermostat/temperature
13. Fit J Tariff meter
14. Get insulation in the roof
15. Insulate/lag hot water pipes
16. Switch off appliances at the plug when not in use
17. Install/replace window or door draught seals
18. Install pelmets
19. Replace curtains/blinds
20. Use air-conditioning instead of bar heater
21. Close curtains when using aircon
22. Install AAA-rated showerhead
23. Install/replace/use external shading or plant deciduous trees
24. Only heat or cool rooms needed (zoning)
25. Cook with gas oven or microwave (instead of electric oven/hotplate)
26. Use different heater/cooler (eg aircon instead of bar heater)
27. Other

Q19B Which of the recommendations have you implemented so far?

1. Replace fridge/freezer
2. Replace washing machine
3. Replace incandescent globes with compact fluorescent lamps
4. Replace hot water service with 5-star gas, heat pump or solar
5. Service fridge/freezer
6. Service washing machine
7. Dust elements on back of fridge/freezer
8. Get rid of 2nd fridge(s)
9. Use cold water for washing machine
10. Turn down water heater thermostat
11. Adjust fridge/freezer thermostat/temperature
12. Adjust air-con thermostat/temperature
13. Fit J Tariff meter
14. Get insulation in the roof
15. Insulate/lag hot water pipes
16. Switch off appliances at the plug when not in use
17. Install/replace window or door draught seals
18. Install pelmets
19. Replace curtains/blinds
20. Use air-conditioning instead of bar heater
21. Close curtains when using aircon
22. Install AAA-rated showerhead
23. Install/replace/use external shading or plant deciduous trees
24. Only heat or cool rooms needed (zoning)
25. Cook with gas oven or microwave (instead of electric oven/hotplate)
26. Use different heater/cooler (eg aircon instead of bar heater)
27. Other
Q20B What prompted you to do so?
1. I wanted to save on power bills
2. I wished to increase my comfort levels
3. I wished to conserve energy
4. I was concerned about the environment
5. Other reason

Q21B What has prevented you from doing so?
1. It was too costly to pay someone to do it
2. I didn't have enough time to do it myself
3. I haven't got the expertise to do it myself
4. Didn't know who to call to implement the recommendation
5. Getting older, not sure we'd get the value
6. Other reason

Q22B Have you purchased and installed any other energy saving items since your energy check?
1. Yes
2. No
3. Can't say

Q23B What did you buy?
1. Purchased more energy saving globes
2. New fridge/freezer
3. New washing machine
4. New TV/DVD combination
5. Other (specify Q23B01)

Q24B Have you taken any other actions to save energy since your energy check?
1. Yes
2. No
3. Can't say

Q25B What other actions have you taken since your energy check?
1. Bought heavy/heavier curtains
2. Turn off lights
3. Encourage children to switch off lights and shut doors
4. Turn off unnecessary appliances at the powerpoint
5. Washing with cold water
6. Using less water in the garden
7. Bought/made another door snake
8. Other

Q26B Did you receive a follow-up phone call after the energy check?
1. Yes
2. No
3. Can't remember

Q27B Did the follow-up call prompt you to take actions to save energy?
1. Yes
2. No
3. Can't say
SECTION C - FRIDGE BUY-BACK SCHEME

Q1C Has your fridge(s) been collected yet?

1. Yes
2. No
3. Can't say/refused

Q2C How many fridges/freezers have been or will be collected?

1. 1
2. 2
3. 3
4. 4 or more
5. Can't say/refused

Q3C Was the first fridge for collection your:

1. Main fridge - large
2. Main fridge - medium
3. Main fridge - small
4. Other fridge - large
5. Other fridge - medium
6. Other fridge - small or bar
7. Chest Freezer
8. Upright Freezer
9. Can't say/refused

Q4C Approximately how old was or is it?

1. Enter years
2. Can't say/refused

Q5C Was or is it in full-time use prior to collection?

1. Yes
2. No
3. Can't say/refused

Q6C Was or will it be replaced after collection?

1. Yes
2. No
3. Can't say/refused

Q7C What was or will it be replaced with?

SEE Q3C

Q8C Was/Is your second fridge:

SEE Q3C

Q9C Approximately how old was/is it?

1. Enter years
2. Can't say/refused
Q10C Was it in full-time use prior to collection?
1. Yes
2. No
3. Can't say / refused

Q11C Was it replaced after collection?
1. Yes
2. No
3. Can't say / refused

Q12C What was it replaced with?

SEE Q7C

Q13C Was Fridge #3?

SEE Q7C

Q14C Approximately how old was it?
1. Enter years
2. Can't say / refused

Q15C Was it in full-time use prior to collection?
1. Yes
2. No
3. Can't say / refused

Q16C Was it replaced after collection?
1. Yes
2. No
3. Can't say / refused

Q17C What was it replaced with?

SEE Q7C

Q18C Did you have any problems with the pick-up process?
1. Yes
2. No
3. Not collected yet
4. Can't say / refused

Q19C Aside from the pick-up process, how satisfied were you with the fridge buy back scheme?:
1. Very satisfied
2. Satisfied
3. Neither satisfied nor unsatisfied
4. Unsatisfied
5. Very unsatisfied
6. Can't say / Refused
Section D: Interest Free Loan scheme

Q1D Did the energy advisor recommend investing in energy efficient appliances and therefore applying for an interest free loan?

1. Yes
2. No
3. Can't say

Q2D Did you apply for a loan and were you successful?

1. Yes - applied and was successful
2. Yes - applied but wasn't successful
3. No - didn't apply
4. Can't say

Q3D Can you tell me whether there was a particular reason why you did not apply?

1. Yes, there was a particular reason
2. No, no reason why advisor did not recommend these appliances

Q4D What did you purchase?

1. Refrigerator/Freezer
2. Washing Machine
3. Microwave Oven
4. Curtains
5. External Blinds
6. Insulation
7. Other

Q5D Did this replace an existing item your home?

1. Yes
2. No

Q6D Did you dispose of the item that you replaced?

1. Yes
2. No

Q7D How would you rate your satisfaction with the interest free loan scheme:

1. Very satisfied
2. Satisfied
3. Neither satisfied nor unsatisfied
4. Unsatisfied
5. Very unsatisfied
6. Can't say / Refused

Q8D Why were you dissatisfied with the program?

Section E Overall Feedback

Q1Ea Have you noticed a decrease in your energy bills since the energy check?

1. Yes
2. No
3. Unsure
Q1Eb Do you attribute this decrease to the energy check?
1. All
2. In part
3. Not at all
4. Unsure

Q4E Following your energy check in your household are you:
1. More likely to save on energy costs
2. Less likely to take measures to save on energy costs
3. Plan to take measures to save on energy costs
4. None of these
5. Can't say / refused

Q5E Did you feel that the advisor’s knowledge was satisfactory to conduct an energy check:
1. Yes
2. No
3. Can't say / Refused

Q6E How would you rate your satisfaction with the quality of the service that the advisor provided:
1. Very satisfied
2. Satisfied
3. Neither satisfied nor unsatisfied
4. Unsatisfied
5. Very unsatisfied
6. Can't say / Refused

Q7E Did you recommend the home energy check to friends or family?
1. Yes
2. No
3. Can't say / Refused

Q8E Have you encouraged others to implement energy efficient practices?
1. Yes
2. No
3. Can't say / Refused

Q9E Are you currently able to afford to adequately heat or cool your home/living area to a comfortable level?
1. Yes
2. No
3. Can't say / refused

Q10E Since the energy check, have you done anything that has improved the comfort level in your living area?
1. Yes
2. No - comfort stayed the same
3. No - decreased comfort
4. Can't say / refused
Q11E Before the energy check took place did you have difficulties paying your electricity or gas bill that led to any of the following:

1. Sought financial assistance from a welfare organisation to pay electricity or gas bill
2. Sought financial assistance from a friend or family member to pay electricity or gas bill
3. Sought financial assistance or time to pay from supplier
4. Defaulted on a electricity or gas bill
5. Been disconnected
6. Have a electricity or gas debt with a retailer
7. Established payment plan with retailer
10. Established payment plan with Centrelink
8. Change of retailer
9. No, have not experienced any of these things

Q13E Would you be interested in attending a discussion group on the matters covered in this survey?

1. Yes, I would be interested in attending a discussion group
2. No, I would NOT be interested in attending a discussion group

Q14E Would you give consent for Energy Division to contact you in regard to the possibility of requesting your electricity and gas billing data? This data would be requested from your retailer for the purpose of this evaluation.

1. Yes, I give consent for Energy Division to contact me
2. No, I DO NOT give consent for Energy Division to contact me

Section F Demographics

Q1F Which age group are you in? Would it be:

1. 16 to 19 years
2. 20 to 24 years
3. 25 to 34 years
4. 35 to 44 years
5. 45 to 54 years
6. 55 to 59 years
7. 60 to 64 years
8. 65 years or over
9. Can't say / Refused

Q2F GENDER

1. Male
2. Female

Q3F Including yourself how many people aged 16 and over live in this household?

Q4F How many children under 16 years live in this household?

Q5F Can you tell me your approximate average weekly earnings before tax is taken out? I'll read out some categories and could you please tell me into which one your weekly income falls?

1. Less than $100 per week
2. $100 to $199 per week
3. $200 to $299 per week
4. $300 to $499 per week
5. $500 to $749 per week
6. $750 to $999 per week

Evaluation of the Energy Efficiency Program for Low Income Households
7. $1,000 or more per week
8. Can't say
10. None

Q6F Is your main source of income:

1. Salary and wages
2. Self funded retirees
3. Aged pension
4. Disability support pension
5. Dept. Vets Affairs pension
6. Single parent pension
7. New Start Allowance
8. Other
9. Refused

Q7F Is your residence:

1. Privately rented
2. housing trust
3. Privately owned
4. Aboriginal housing authority
5. Community housing
6. Supported residential facilities
7. Retirement village
8. Refused

Q8F That concludes the survey. Thank you for your time
Appendix 2: Focus groups

Focus group questions

1. Where did you hear about the program?
2. Please describe the process of the energy check followed by the auditor?
3. How did you find the light bulbs?
4. What were you feelings about the showerhead?
5. Can you recall any recommendations made within the energy checks?
   a. Where any of these recommendations implemented?
   b. Have the recommendations been implemented?
5. What were the benefits from the energy check for your household?
6. Do you feel it is easier to heat/cool your home since having the energy check?
7. Do you feel your power consumption has fallen due to energy check?
8. What did you like the most about the program?
9. What did you like the least about the program?
10. How do you think the program could be improved?

Focus group locations, times and dates

Whyalla – 28 November 3pm
Peterborough – 29 November 2pm
Noarlunga – 30 November 10am
Woodville – 30 November 3pm
Elizabeth – 1 December 10am
Mt Baker – 1 December 3pm
Walkerville – 2nd December – auditors discussion group
Appendix 3: List of key Informants

Key informants involved in the evaluation process were:
Service providers – selection of program managers and facilitators
Energy Division employees
PIRSA Rural Finance
CYFS
Sustainable Focus
SACOSS
Appendix 4: Sustainable Focus Method of Estimation

Actions from the most common audit recommendations implemented according to survey responses and the known dimensions of the retrofit kit, the fridge buy-back and the interest free loan scheme were assessed into quantified financial, energy and greenhouse savings in relation to the following items.

Item 1. Retrofit Kit

CFLs
Number still installed at time of survey by estimate of average usage (3 hours per day) by days in use per year (301 days) by difference between CFL and what it replaces (W). The power difference between the incandescent lamp removed and the CFL installed was calculated to be a weighted average of 49W.

Shower Heads
Number still installed at time of survey installed by estimate of average usage (7 minutes per day) by days in use per year (301) by number of people per house (1.7) by difference between AAA and what it replaces (flow rate, 15 – 9 litres/minute). Hot water fraction (50%) by type of hws (gas or electric) by energy use/litre less standing losses for hot water service type.

Draught Excluders
Comfort benefit only – too unreliable to estimate the savings in heating and cooling that can be attributed to the use of a door snake as there are too many variables.

Item 2. Audit Recommendations

Actions are categorised based on survey responses regarding actions implemented. The estimated average savings have then been calculated for the following most common actions that are not covered elsewhere.

<table>
<thead>
<tr>
<th>Audit recommendation</th>
<th>#</th>
<th>Calculation comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>switch off appliances</td>
<td>203</td>
<td>refer below for calcs (1)</td>
</tr>
<tr>
<td>other</td>
<td>152</td>
<td>N/A</td>
</tr>
<tr>
<td>draught seal windows/doors</td>
<td>113</td>
<td>taken partly as comfort improvement - difficult to quantify</td>
</tr>
<tr>
<td>replace incandescents</td>
<td>80</td>
<td>refer below for calcs (2)</td>
</tr>
<tr>
<td>turn down hws thermostat</td>
<td>74</td>
<td>refer below for calcs (3)</td>
</tr>
<tr>
<td>adjust fridge/freezer thermostat</td>
<td>71</td>
<td>difficult to quantify</td>
</tr>
<tr>
<td>replace fridge freezer</td>
<td>70</td>
<td>not evaluated due to potential double counting with fridge buy-back</td>
</tr>
<tr>
<td>lag hws pipes</td>
<td>43</td>
<td>refer below for calcs (3)</td>
</tr>
<tr>
<td>remove 2nd fridge</td>
<td>35</td>
<td>not quantified - refer below</td>
</tr>
</tbody>
</table>

1. Switch off appliances
Number households by average household standby (90W) by 20% - equivalent to switching off medium appliance when not in use and achieving an 18W saving.

2. Replace incandescents
As per retrofit kit CFL calculation, except hours per day reduced to 2 to acknowledge lower use of additional lamps.
3. Turn down hws thermostat or lag (insulate) hws pipes
Number households by saving (10%) by type of hws (gas or electric) by energy use per annum for hot water service type.

**Item 3. Fridge buy back**

Total number of fridges from FBB Scheme less fridges also in Interest Free Loan Scheme (to avoid double counting) by improvement in fridge performance between 1990 and 2004 (500kWh) plus fridges retired rather than replaced (from survey data) by fridge performance 1990.

**Item 4. Interest Free Loan Scheme**

New fridges and freezers were far and away the most popular purchase under the Interest Free Loan Scheme (184 out of 222). Savings have therefore only been calculated for the fridges and freezers.

**Item 5. Total of the above**

For the survey sample, the total of retro-fit kits and, audit recommendations energy, greenhouse and cost savings have been calculated.

For the complete, fridge buy back, and the interest free loan schemes energy, greenhouse and cost savings have been calculated.

These results are shown in the following tables.

**Conversion factors**

The following conversion factors were used in the calculations:

<table>
<thead>
<tr>
<th>Tariffs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19 c/kWh</td>
<td>SA electricity - peak</td>
</tr>
<tr>
<td>7.5 c/kWh</td>
<td>SA electricity - off peak</td>
</tr>
<tr>
<td>1.5 c/MJ</td>
<td>SA natural gas</td>
</tr>
</tbody>
</table>

adapted from standing contracts

<table>
<thead>
<tr>
<th>Emission factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>73.8 kgCO2/GJ</td>
<td>Natural Gas - full fuel cycle SA</td>
</tr>
<tr>
<td>0.96 kgCo2/kWh</td>
<td>Electricity SA</td>
</tr>
</tbody>
</table>

from AGO Factors and Methods Workbook
### Annual and Lifetime Savings of Survey Respondents (sample size = 1,000)

<table>
<thead>
<tr>
<th>Number</th>
<th>annual</th>
<th>lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>elec saving</td>
<td>gas saving</td>
</tr>
<tr>
<td>#</td>
<td>kWh</td>
<td>MJ</td>
</tr>
<tr>
<td>CFL's</td>
<td>1746</td>
<td>77019</td>
</tr>
<tr>
<td>Showerheads</td>
<td>390</td>
<td>118069</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>203</td>
<td>3654</td>
</tr>
<tr>
<td>Further CFL's</td>
<td>410</td>
<td>12057</td>
</tr>
<tr>
<td>Turn down tstat, lag hws</td>
<td>117</td>
<td>10238</td>
</tr>
<tr>
<td>Total</td>
<td>221037</td>
<td>910887</td>
</tr>
</tbody>
</table>

**Notes**

1. Quantification of greenhouse and cost savings has been undertaken for selected audit actions only. Refer to calculations for details.
2. Other benefits of the program, including increased awareness and flow-on effects have not been quantified. These are likely to be more significant than the direct impacts of the program that have been quantified.
3. Costs savings include GST.
4. Fridge buy back and Interest Free Loan Scheme counted separately.
### Annual and Lifetime Savings of Fridge Buy Back

<table>
<thead>
<tr>
<th></th>
<th>annual</th>
<th>lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>elec saving</td>
<td>gas saving</td>
</tr>
<tr>
<td></td>
<td># kWh</td>
<td>MJ</td>
</tr>
<tr>
<td>Fridge buy-back</td>
<td>728</td>
<td>368233</td>
</tr>
</tbody>
</table>

Note: Actually 811 fridge buy-backs, however, 83 coincided with IFLS.

### Annual and Lifetime Savings of Interest Free Loan Scheme

<table>
<thead>
<tr>
<th></th>
<th>annual</th>
<th>lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>elec saving</td>
<td>gas saving</td>
</tr>
<tr>
<td></td>
<td># kWh</td>
<td>MJ</td>
</tr>
<tr>
<td>IFLS - fridges &amp; freezers only</td>
<td>184</td>
<td>92000</td>
</tr>
</tbody>
</table>

### Annual Savings Per Action

<table>
<thead>
<tr>
<th></th>
<th>annual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>elec saving</td>
</tr>
<tr>
<td></td>
<td>gas saving</td>
</tr>
<tr>
<td></td>
<td>CO2e saving</td>
</tr>
<tr>
<td></td>
<td>cost saving</td>
</tr>
<tr>
<td></td>
<td># kWh</td>
</tr>
<tr>
<td>CFL’s</td>
<td>1</td>
</tr>
<tr>
<td>Showerheads</td>
<td>1</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>1</td>
</tr>
<tr>
<td>Further CFL’s</td>
<td>1</td>
</tr>
<tr>
<td>Turn down tstat, lag hws</td>
<td>1</td>
</tr>
<tr>
<td>Fridge buy-back</td>
<td>1</td>
</tr>
<tr>
<td>IFLS fridge or freezer</td>
<td>1</td>
</tr>
</tbody>
</table>
## Lifetime savings calculations

Interest Rate 6%
No escalation of electricity or gas prices

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFL's</td>
<td>$14,634</td>
<td>$13,756</td>
<td>$12,930</td>
<td>$12,154</td>
<td>$11,425</td>
<td>$10,740</td>
<td>$10,095</td>
<td>$85,734</td>
</tr>
<tr>
<td>Showerheads</td>
<td>$23,413</td>
<td>$22,008</td>
<td>$20,688</td>
<td>$19,446</td>
<td>$18,280</td>
<td></td>
<td></td>
<td>$103,835</td>
</tr>
<tr>
<td>Switch off appliances</td>
<td>$694</td>
<td>$653</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$1,347</td>
</tr>
<tr>
<td>Further CFL's</td>
<td>$2,291</td>
<td>$2,153</td>
<td>$2,024</td>
<td>$1,903</td>
<td>$1,789</td>
<td></td>
<td></td>
<td>$10,160</td>
</tr>
<tr>
<td>Turn down tstat, lag hws</td>
<td>$1,910</td>
<td>$1,795</td>
<td>$1,687</td>
<td>$1,586</td>
<td></td>
<td></td>
<td></td>
<td>$6,978</td>
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<tr>
<td>Fridge buy-back</td>
<td>$69,964</td>
<td>$65,766</td>
<td>$61,820</td>
<td>$58,111</td>
<td>$54,624</td>
<td></td>
<td></td>
<td>$310,286</td>
</tr>
<tr>
<td>IFLS - fridges &amp; freezers only</td>
<td>$17,480</td>
<td>$16,431</td>
<td>$15,445</td>
<td>$14,519</td>
<td>$13,647</td>
<td></td>
<td></td>
<td>$77,523</td>
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</table>