



Final Report

Gleneelg SAVES Consortium

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Acknowledgements and Disclaimer:

Glenelg SAVES was carried out with financial support from the Australian Government. The project consortium consisted of Western District Health Service – Southern Grampians Glenelg Primary Care Partnership, Glenelg Shire Council and Federation University. We thank the Department of Industry, Innovation and Science, and in particular, the support of Angela Clark for her encouragement, support and advocacy. The consortium members also recognise the engagement and dedication of Glenelg Shire Aged and Disability Services, and in particular, the enthusiastic and tireless Community Support Workers, Home and Community Care Clients and Planned Activity Groups. Federation University worked tirelessly to collect and analyse data while taking time to understand the needs of the local community. We also acknowledge the support of the Moreland Energy Foundation, in particular, Jason Cox for his support delivering community workshops and providing feedback on project design. The input of local home maintenance providers and electrical, homeware and hardware businesses was greatly appreciated to source local skills and materials. Finally, we thank Powercor for their invaluable support in providing participant energy data. This project could not have occurred without such diverse support.

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Publication data: Glenelg SAVES, Final report (May 2016)

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Executive Summary

The groups most vulnerable in Australia to rising energy costs include the elderly, the chronically ill and the socio-economically disadvantaged. The Australian Government's Low Income Energy Efficiency Program (LIEEP), funded through the Department of Industry, Innovation and Science, aimed to assist these disadvantaged groups. The Glenelg SAVES project, funded under Round Two of LIEEP, aimed to address information failure as a barrier preventing low-income residents from improving their energy efficiency. The Glenelg SAVES consortium: Western District Health Service - Southern Grampians Glenelg Primary Care Partnership (SGGPCP), the Glenelg Shire Council (Glenelg Shire) and Federation University Australia (FedUni), managed this project.

This partnership between SGGPCP as the lead agency, Glenelg Shire, FedUni and energy efficiency experts was set up as an advisory group to lead the project. This collaborative approach involved staff from each organisation sharing knowledge, skills, lessons from previous projects and other resources.

The Glenelg SAVES project targeted low-income households who receive Home and Community Care (HACC) services in the Glenelg Shire in South-West Victoria, including elderly residents and people with a disability. The project focused on increasing the capacity and knowledge of the Glenelg HACC staff through an innovative participatory approach, which sought to engage staff in the project by providing home energy efficiency training. This training was tailored to the existing skills and knowledge of HACC staff and enabled them to undertake home energy assessments in both their own homes and that of the region's HACC service recipients. In particular, the objectives of the Glenelg SAVES project were to:

1. Increase the household energy efficiency skills, specifically in home auditing and advice, and improve household energy efficiency for Glenelg Shire HACC staff.
2. Improve energy efficiency in the homes of HACC clients in the Glenelg Shire.
3. Deliver a high quality trial project that provides data and analysis to inform policy and future energy efficiency programs and support for low income households.

This project trialed a participatory development method designed to engage HACC staff and clients in becoming more energy efficient. This approach aimed to increase the knowledge, interest and motivation of HACC staff, who undertook home energy assessments and provided energy efficiency advice to HACC clients through their existing relationship. A range of data including survey, energy use and climate data has been collected and analysed to evaluate the effectiveness of Glenelg SAVES and inform future policy and program approaches.

Methodology

Project Approach

The first stage of the project involved recruiting Glenelg Shire HACC staff to take part in the project. All Glenelg Shire HACC staff (support, maintenance, assessment and management) were invited to take part in an initial information session to outline the project, including processes, support structures and benefits. The project also employed an existing HACC staff member, for 0.2EFT, to be the primary point of contact for the HACC staff, and act as the Glenelg SAVES champion.

HACC staff participants received training in home energy assessments from the Moreland Energy Foundation (MEFL). This training was designed to enable participants to identify and prioritise recommendations, and help arrange their implementation. Once trained, the staff collected baseline data using a paper-based survey and conducted home energy assessments for HACC client participants. The energy efficiency implementation was then carried out, and post-implementation data collected. The project had a budget of up to \$200 per household to support energy efficiency purchases.

As part of the project's community engagement activities, family and others having a relationship with HACC Clients were also encouraged to become more energy efficient. This phase included six community workshops with Planned Activity Groups (PAG) and the local Men's Shed Association.

The longitudinal design employed, used measurements at baseline and at intervals throughout the project. The three major data sources for this study included: energy data, participant surveys and climate data. Qualitative data was also collected through discussions with HACC workers, consortium members and contractors involved in the project.

Evaluation

The methodology applied to the Glenelg SAVES evaluation allows for evidence-based policy making by studying questions such as:

- What influence did the Glenelg SAVES project have on energy use behaviour of HACC staff and clients?
- What influence did the Glenelg SAVES project have on HACC staffs' knowledge and ability to provide advice on household energy efficiency opportunities?
- Which types of participants benefited most from the Glenelg SAVES project?
- What types of low-income consumers are attracted to energy efficiency programs and technologies?

- What factors influence adoption of energy efficiency technologies and curtailment behaviour?
- How does project participation influence the drivers of energy use behaviour?

The evaluation design developed by FedUni researchers is a well-grounded theory-based approach that ensures policy relevance: it not only answers what works but also why (or why not). The framework maps out the sequence from inputs to impact and allows for the identification of barriers that may influence the project's outcomes. Importantly the framework evaluates the Glenelg SAVES trial not simply in terms of observed changes in energy use (and other related measures) but rather in terms of what happened because of the project compared with estimates of what would have happened without the trial (i.e. counterfactuals).

FedUni maintained records of all project activities, all participants (HACC staff and clients) recruited into the project, and all energy efficiency recommendations adopted. The content of the database included:

- Household energy consumption data (from meter and/or billing data)
- Household and demographic data relating to LIEEP Data items
- Weather data (from Bureau of Meteorology data files)
- Household attitudinal and other data

Glenelg SAVES was conducted from 2013/14 to 2015/16 and included 22 HACC Staff and 306 HACC Client participants.

Findings

In summary:

- The project was successful in increasing beliefs around the energy efficiency levels of participant households and their perceived control over energy consumption.
- Glenelg SAVES was successful in increasing: perceived household energy efficiency levels and control over energy use and heating curtailment behaviour among HACC Client participants.
- The project was successful in achieving its aim of increasing the energy knowledge of HACC Staff.
- Most workers and clients had carried out some of the recommendations arising from their energy efficiency assessments.
- Satisfaction with participation in the project for both workers and clients was high.
- The project was not successful in reducing household electricity use. Although electricity use did decline from the project's pre- to post-assessment phase, this was consistent with

historical trends. The actual levels of energy use were 5% higher than forecasts from statistical modelling. These results were consistent for both HACC Staff and Clients.

- The analysis found that energy efficiency knowledge had a significant influence on attitudes towards reducing energy and participant's perceived ability to achieve this goal.
- HACC staff identified economic factors as the major reason for joining the project, whereas for HACC clients the influence of HACC staff and financial support for energy efficiency purchases were greater.
- A high level of energy curtailment for HACC clients was identified, suggesting little potential to increase such behaviour, although opportunities for increased energy efficiency may exist.
- Most common actions, for staff and clients, generally related to appliances and heating.

Recommendations

1. Extend the HACC Program to incorporate energy efficiency training for all staff and targeted advice and support for clients.
2. Promote energy efficiency as a wellbeing issue that falls within the provision of public health services.
3. Alleviate imperfect information market failure by using social networks to support disadvantaged groups in accessing energy efficiency information, advice and support.
4. Establish standard guidelines for undertaking energy efficiency program evaluations in an Australian context.
5. Investigate opportunities for encouraging financial support for energy efficiency investment by low-income households.

List of acronyms and abbreviations:

ADC	Average Daily Consumption
BOM	Bureau of Meteorology
CADE	Computer-assisted data entry
FedUni	Federation University Australia
Glenelg Shire	Glenelg Shire Council
HACC	Home and Community Care
HVAC	Heating, ventilation, and air conditioning
kWh	Kilowatts per hour
LIEEP	Low Income Energy Efficiency Program
MEFL	Moreland Energy Foundation
NAC	Normalised Annual Consumption
NADC	Normalised Average Daily Consumption
OMR	Optical mark recognition
PAG	Planned Activity Groups
PV	Solar photovoltaic
SGGPCP	Southern Grampians Glenelg Primary Care Partnership
TPB	Theory of Planned Behaviour
VEET	Victorian Energy Efficiency Target

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1. Introduction

This report presents the findings of Glenelg SAVES. Undertaken from July 2013 – 30 June 2016, the evaluation included in this report represents an important element of understanding the influence of the Glenelg SAVES project on improving the energy efficiency of low-income households. Although this research is confined to the influence of one project, its findings provide a broader understanding of the role of such programs in overcoming the barriers to the uptake of energy efficiency measures in low-income households.

This report is organised into five broad sections. The first section details the background, objectives and activities of the Glenelg SAVES project. The second section details the methods used to evaluate the project's effectiveness. The following section details and discusses the evaluation findings and is organised around the key topic areas covered in the study. The fourth section details the project's budget. The final section concludes the report with a brief discussion of the evaluation findings and recommendations for future support of low-income households.

1.1 Glenelg SAVES Background

The groups most vulnerable in Australia to rising energy costs include the elderly, the chronically ill and the socio-economically disadvantaged. The Australian Government's Low Income Energy Efficient Program (LIEEP), funded through the Department of Industry, Innovation and Science, had the following two objectives to assist disadvantaged groups:

1. To trial and evaluate a number of different approaches in various locations to assist low-income households to become more energy efficient.
2. To capture and analyse data and information for future energy efficiency policy and program approaches.

The intended benefits of the LIEEP were to:

- Assist low-income households to implement sustainable energy efficiency practices to help manage the impacts of increasing energy prices and improve the health, social welfare and livelihood of low-income households.
- Build the knowledge and capacity of consortium members to encourage long-term energy efficiency among their customers or clients.
- Build capacity of Australia's energy efficiency technology and equipment companies by maximising the opportunities for Australian industries to participate in the projects.

The Glenelg SAVES project, funded under Round Two of the LIEEP, aimed to address information failure as a barrier preventing low-income residents from improving their energy efficiency. This project and evaluation was managed by the Glenelg SAVES consortium: Western District Health Services - Southern Grampians Glenelg Primary Care Partnership (SGGPCP), the Glenelg Shire Council (Glenelg Shire) and Federation University Australia (FedUni).

This project trialed a participatory development method designed to engage HACC staff and clients in becoming more energy efficient. This approach involved an innovative participatory training approach to increase the knowledge, interest and motivation of Home and Community Care (HACC) staff, who undertook home energy assessments and provided advice via their existing trusted relationship with HACC clients. A range of data including survey, energy use and climate data has been collected and analysed to evaluate the effectiveness of Glenelg SAVES and inform future policy and program approaches.

1.2 Glenelg SAVES: the project

The first stage of the project involved recruiting Glenelg Shire HACC staff to participate in the project. All Glenelg Shire HACC staff (support, maintenance, assessment and management) were invited to take part in an initial information session to outline the project, including processes, support structures and benefits. The project also employed an existing HACC staff member, for 0.2EFT, to be the primary point of contact for the HACC staff, and act as the Glenelg SAVES champion.

HACC staff participants received training in home energy assessments from the Moreland Energy Foundation (refer Appendix A for training materials). This training was designed to enable participants to identify and prioritise recommendations (refer Appendix B for prioritisation form), and assist with the arrangement for energy efficiency implementation to be carried out in the home. The participatory training approach enabled HACC staff to undertake assessments in their own homes. This approach provided HACC staff with the opportunity to apply the energy efficiency knowledge and skills gained from their training in a context that was personally relevant to them. Once trained the staff collected baseline data using a paper-based survey and conducted home energy assessments for HACC client participants. The energy efficiency implementation was then carried out, and post-implementation data collected. The project had a budget of up to \$200 per household to assist with energy efficiency purchases.

As part of the project's community engagement activities, family and others having a significant relationship with HACC Clients were also encouraged to become more energy efficient. This phase

included community workshops with Planned Activity Groups (PAG) and local “Men’s Sheds”. Six Community Forums were conducted as part of the parallel community awareness program targeted at stakeholders who work with or who have a relationship with HACC clients.

Maureen Crisp: HACC worker

Maureen Crisp is already putting her new found skills to work, to improve energy efficiency in her home. Maureen was motivated to be involved in Glenelg SAVES as it “helps my clients save money, not only during the project, but into the future too”.

Through the Glenelg SAVES (Seniors Achieving Valuable Energy Savings) project, Maureen has been trained in Home Energy Efficiency Assessment. The training provided Maureen with the information she needed to make the best choice when purchasing her new appliance, and also how to use the machine the most efficiently once it was installed:

- Look at water and energy use and how to read the star rating stickers
- Consider a front loader; they often use less water
- Wash in cold water whenever possible
- Use less detergent

Maureen’s involvement in the Glenelg SAVES project has heightened her awareness of energy efficiency, and increased her knowledge. “Having the information provided to me in a no-nonsense format, was invaluable,” Maureen said, “and then to be able to put it into practice straight away was the real winner for me. I can’t wait to be able to assist some of my clients to improve their energy efficiency too”.



Saving Energy – It’s all about “Nanna Technology”

Jason Cox, from the Moreland Energy Foundation recently reminded members of the Dartmoor Planned Activity Group (PAG) that “Nanna Technology” is one key to saving on your household energy bills. “ Losing precious heat during winter or cool air in summer as a result of drafts and gaps in our homes is a major cause of energy inefficiency” said Mr Cox at a series of energy efficiency workshops facilitated by the Glenelg SAVES project. “Door snakes, cool towels near fans and a knee rug are some of the simple ways to save energy - much as our Nanna used to tell us” he said.



The workshop in Dartmoor provided opportunity not only for the Planned Activity Group members to pick-up some great energy efficiency tips, but also the PAG staff and other staff at the Dartmoor Bush Nursing Centre. Conducted during the course of a regular PAG session, a number of people had to pop in and out of the workshop. “The ability for sharing learnings between participants, when someone had missed a tip, was amazing” said Maureen Crisp, Glenelg SAVES Project Officer.

Rachael Pridham, PAG Coordinator noted that “all of the PAG members were really interested in what Jason had to say – it was great to have an expert come and visit us in Dartmoor”. “There has already been further discussion about people making some changes in their homes, including getting an energy saving switch for their TVs that they control, rather than the auto-off ones, and that they will speak to their families about changing to LED lighting”.

The longitudinal design employed, used measurements at baseline and at intervals throughout the project. The three major data sources for this study included: energy data, participant surveys and climate data. Qualitative data was also collected through discussions with HACC workers, consortium members and local contractors involved in the project.

Project Objectives

1. Increase the household energy efficiency skills, specifically in home auditing and advice, and improve household energy efficiency for 30 Glenelg Shire HACC staff.
2. Improve energy efficiency in the homes of 300 HACC clients in the Glenelg Shire.
3. Deliver a high quality trial project that provides data and analysis to inform policy and future energy efficiency programs and support for low income households.

Project Governance

The following details the project’s consortium members and their roles and responsibilities.

Table 1: Project Governance

Consortium Member	Role, Accountabilities and Responsibilities
Western District Health Service – Southern Grampians and Glenelg Primary Care Partnership (SGGPCP)	Lead Agency, with overall accountability to existing Executive Committee of the SGGPCP <ul style="list-style-type: none"> • Project direction and management • Facilitate project advisory group • Project Reporting, including data • Information dissemination • Project Manager employment • Manage contractors (for energy efficiency implementation)
Glenelg Shire: Home and Community Care (HACC) Program	Project conducted through Glenelg Shire HACC program <ul style="list-style-type: none"> • Manage and supervise HACC support staff • Manage and supervise HACC Maintenance staff • Advisory Group member • Utilise expert knowledge to facilitate project with HACC staff and HACC clients
Federation University Australia	Expert advice and direction with regards to the project, and in particular data collection, analysis and evaluation <ul style="list-style-type: none"> • Manage and deliver data collection and analysis • Data Management and synthesis • Project evaluation • Assistance with Project Reports • Advisory Group member

Note: Originally, Energised Homes were part of the Glenelg SAVES consortium with the role and responsibility of providing expert energy efficiency advice and energy efficiency training. Due to extraneous circumstances, the organisation had to withdraw from the consortium in early 2014. The role and tasks associated with Energised Homes' involvement were outsourced to the Moreland Energy Foundation (MEFL).

1.3 Program Approach

Glenelg SAVES targeted low-income households who receive HACC services in the Glenelg Shire in South West Victoria (refer Figure 1), including elderly residents and people with a disability. The project employed an innovative participatory training approach to increase workforce capacity of the Glenelg Shire HACC staff. This participatory training approach, allowed the HACC staff to undertake training to increase energy efficiency awareness and to develop skills in home energy assessment. As well as experiencing a home energy assessment and adapting their home environment and behaviour, the project was designed to increase the HACC staff's engagement prior to recruiting HACC clients. The "real life" experience of conducting a home energy assessment and adaptation to improve their own home energy efficiency further developed their knowledge and understanding thus enabling staff to translate the benefits to their client group.

Figure 1: Map of Glenelg Shire Council, Local Government Area



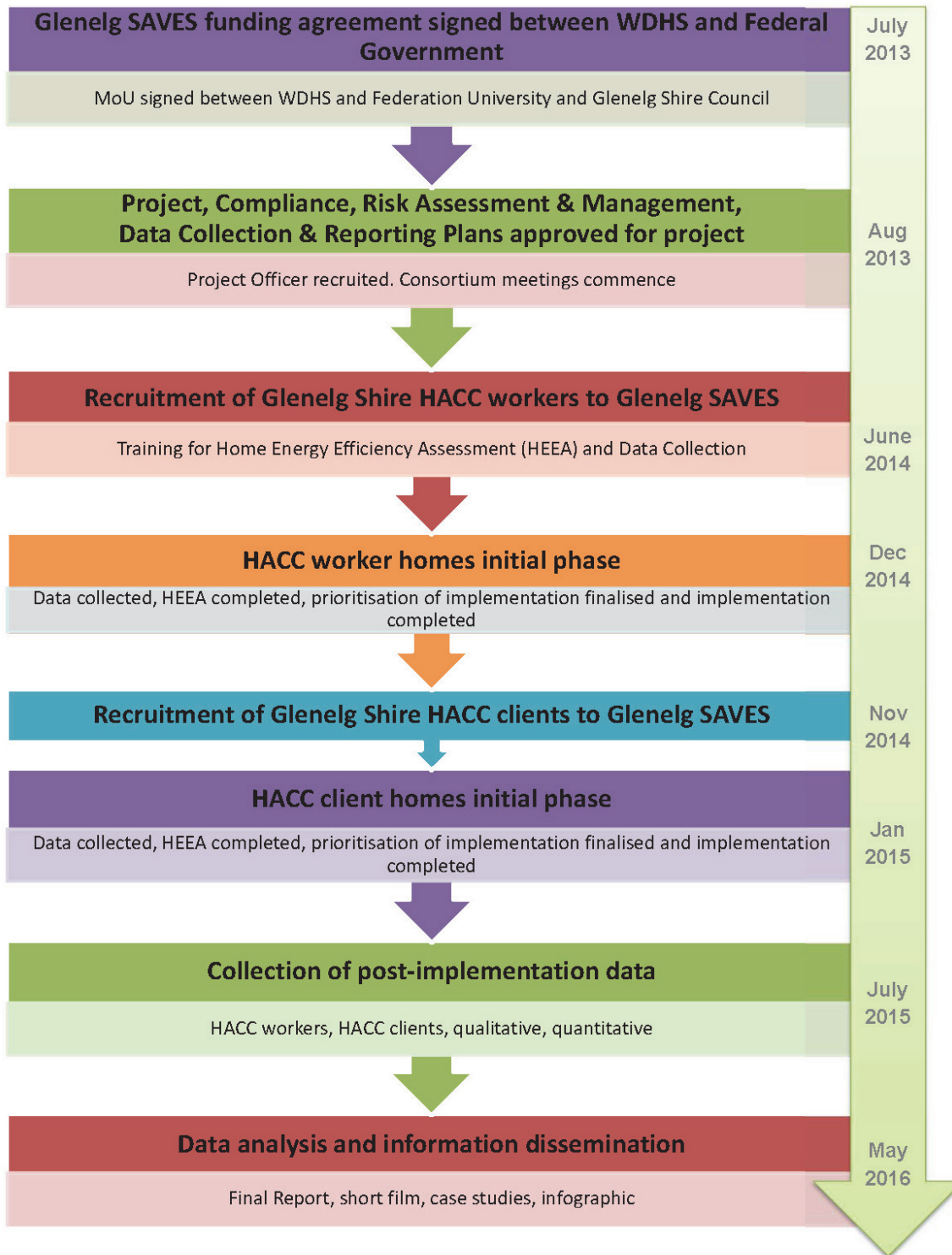
HACC staff work in the homes of their clients and are in a unique position to work closely with them to increase their energy efficiency. In addition, the relationship HACC staff have with HACC service recipients provides an opportunity to engage with this vulnerable sub-set of the community. HACC workers have established a rapport and trust with their clients to support their clients to live independently and autonomously in the community. Anecdotal feedback from HACC staff indicates that many of their clients' energy use behaviours could be detrimental to their health and wellbeing. This includes not using heating during winter or air-conditioning during summer for fear of rising

energy bills. After conducting a home energy assessment with their clients, staff were then able to link their clients with opportunities to improve energy efficiency through local service providers. Previously, HACC clients have been reluctant to take up some community projects (such as the Victorian Energy Efficiency Target (VEET) schemes), mainly due to lack of understanding of benefits and distrust of those implementing such programs.

The collaboration between SGGPCP as the lead agency, Glenelg Shire HACC, FedUni and energy efficiency experts was formed to establish an advisory group to lead the project. This advisory group allowed for a collaborative approach that involved the sharing of knowledge, skills, lessons from previous projects and other resources.

During the initial planning of Glenelg SAVES, a program logic framework was used to outline the theory and major assumptions underlying the project (refer Appendix C for project planning documentation). The major phases of the project are detailed in Figure 2 (overleaf).

Figure 2: Project Timeline



The following provides details of how the project's objectives and strategies were linked with intended outputs and outcomes because of this process.

Objective One

Increase the household energy efficiency skills, specifically in home auditing and advice, and improve household energy efficiency for 30 Glenelg Shire HACC staff by June 2015.

Strategies:

- Recruit a Glenelg Shire HACC staff member for 0.2EFT Project Officer position, allowing for internal leadership and communication.
- Conduct an information awareness session on the project, outline the home energy efficiency and auditing training for all Glenelg Shire HACC staff and recruit 35 staff to undertake training.
- Deliver a course in Home Sustainability Auditing.
- Enable recruited HACC staff to collect prescribed baseline data, conduct audits in their own homes to priorities actions for improving energy efficiency.
- Support HACC staff to action energy efficiency priorities by assisting HACC staff to implement home adaptation and behaviour change strategies in their own homes and collect post-improvement data.

Intended Outputs:

- HACC staff member recruited as a project officer
- Information session conducted with HACC staff
- 35 HACC staff homes have baseline and post energy efficiency improvement data collected
- 35 HACC staff have implemented home adaptation and behaviour change to increase energy efficiency

Intended Outcomes:

- Trained HACC staff have increased capacity to enable recruitment of HACC clients for the project.
- Increased skills and knowledge, through participation in the "real life" experience, of trained HACC staff to engage HACC clients and others in the importance of improving home energy efficiency.
- Increased household energy efficiency in homes of 35 HACC staff
- Recruitment of HACC clients for this project enables further discussions for all HACC clients around household energy efficiency.

Objective Two

Improve energy efficiency in the homes of 300 HACC clients in the Glenelg Shire by December 2015.

Strategies:

- Trained HACC staff to each recruit 10 HACC clients for the project, conduct home audits, and collect baseline and post-implementation data.
- Implement audit recommended home adaptations for the HACC client homes by linking with HACC maintenance, government and community projects and outside contractors.
- Supporting HACC Clients to undertake behavioural change to improve energy efficiency
- Deliver a targeted community energy efficiency awareness education program.

Intended Outputs:

- 350 HACC Clients recruited for the project.
- Home audits and pre data collection completed in the homes of 350 HACC clients.
- 300 HACC clients have been supported to implement home adaptation and behaviour change to increase energy efficiency and post data collected.
- Five energy efficiency workshops conducted with target groups across the Glenelg Shire.
- Media releases placed across the Glenelg Shire print and electronic media to increase awareness of energy efficiency and the project (refer Appendix D for project media releases).

Intended Outcomes:

- Data collection informs future household energy efficiency projects.
- Increased energy efficiency in the homes of 300 HACC clients

Objective Three

To deliver a high quality trial project that provides data and analysis to inform policy and future energy efficiency projects for low income households, by 31 March 2016.

Strategies:

- Develop robust project management and governance to ensure trial project validity and credibility.
- FedUni will work with HACC staff to collect data as specified in LIEEP funding agreement (Annexure C Schedule 4).

- Report and analysis of data.

Intended Outputs:

- High functioning and rigorous advisory group reporting to SGGPCP Executive.
- Data sets completed for 30 HACC staff and 300 HACC clients.

Intended Outcomes:

- Valid data sets and analysis to inform future household energy efficiency programs.

Based on the above program logic framework, the following details specific activities administered as part of Glenelg SAVES.

Engagement and training of HACC staff

The first stage of the project involved recruiting Glenelg Shire HACC staff to participate in the project. Previously the Glenelg Shire HACC participated in the Sustainability Victoria funded Pass the Parcel Project¹ managed by SGGPCP. This project involved working with a small number of staff who volunteered to participate in the project; 12 staff participated, working with 55 clients. This was a valuable opportunity to ascertain training needs and interest of HACC staff. SGGPCP, together with support from Deakin University/Department of Health/ Department of Human Services Strategic Alliance facilitated further training for HACC staff through Kildonan Uniting Care. As a result, Glenelg Shire HACC were well placed to participate in the trial with a good framework to build on and management support, but more importantly a recognition on the importance of energy efficiency, and the impact of rising energy prices on the welfare of their low-income client group and their ability to intervene.

All Glenelg Shire HACC staff (support, maintenance, assessment and management) were invited to participate in an initial information session to outline the project, including processes, support structures and outcomes. Attendance at the information session was subsidised by the Glenelg Shire to ensure access for all staff. The information session highlighted processes for staff training, benefits of participation in training including “real life” experience, impact on personal household energy efficiency, processes to impact clients’ energy efficiency and value of the training for community participation. The project also engaged an existing HACC staff member, for 0.2EFT, to be the primary point of contact for the HACC staff and act as the project champion.

¹ Further information on the Pass the Parcel project is available at: <http://sggpcp.com/wp-content/uploads/2014/05/2013FINALREPORT.pdf>

The participating HACC staff received 12 hours of formal training in home energy efficiency and energy assessment. Once trained, HACC staff collected baseline data (as required in Annexure C LIEEP data items) in-home and conducted home energy assessments for their own residence. Furthermore, they learnt to identify and prioritise recommendations, and assist with the arrangement for energy efficiency implementation to be carried out in the home. FedUni assisted with data collection (see Appendix E for Data Collection and Reporting Plan). The energy efficiency implementation was then carried out, and post-implementation data collected. The project had a budget of up to \$200 per household to assist with energy efficiency purchases.

Clipping 1: Seniors saving power

Seniors saving power

Thirty-five Community Support Workers (CSWs) will receive formal home energy assessment training as part of a new project at Glenelg Shire Council.

Glenelg SAVES (Seniors Achieving Valuable Energy Saving) equips CSWs with the skills needed to assess the energy consumption of both their own and their clients' homes, then implement strategies to reduce power usage.

The program was launched in late February and is being coordinated through the Council's Home & Community Care (HACC) department.

Glenelg Shire Council Mayor Councillor John Northcott said it was exciting for Glenelg Shire to be at the forefront of initiating positive changes to assist our environment.

"Even if we all make the small differences in our homes, it adds up to a huge difference in energy savings overall.

"The real benefits aren't what we will feel immediately but they are what will affect the livelihoods of our children and future generations."

The project received funding from the Australian Government Department of Industry as part of the Low Income Energy Efficiency Program.



From Left: Executive Officer of the Southern Grampians Glenelg Primary Care Partnership Janette Lowe, Glenelg Shire Council 'Glenelg SAVES' Project Officer Maureen Crisp, Glenelg Shire Council Group Manager Community and Culture Adele Kenneally, Glenelg Shire Council Councillor Gilbert Wilson (front) Glenelg Shire Council HACC client Debbie Schultz

Glenelg Shire Council, collaborated and provided the remainder of the funding. improvements with continued research until the project's completion in March 2016.

Source: *Local Government Focus* (April 2014)

Formal home energy assessment training

THIRTY-FIVE Community Support Workers (CSWs) will receive formal home energy assessment training to pass on to their clients, as part of a new project at Glenelg Shire Council.

The initiative, Glenelg SAVES – Seniors

Achieving Valuable Energy Saving – was launched in late February and is being co-ordinated through the council's Home & Community Care (HACC) department.

Together with data collection, CSWs will be funded to assess their own homes for energy

efficiency as well as make some improvements to the energy efficiency of their homes.

CSWs will then involve their clients in the project, collecting pre and post data, conducting an energy efficiency assessment of the homes and also working with the client to arrange for the installation/adjustment to improve the energy efficiency of the home.

Glenelg Shire Council Mayor Cr John Northcott said it was exciting for the shire to be at the forefront of initiating positive changes to assist our environment.

“Even if we all make the small differences in our homes, it adds up to a huge difference in energy savings overall,” he said.

Data will be collected pre and post energy efficiency improvements and the consortium members will all work on the project throughout its duration, until its completion in March 2016.

Source: *Hamilton Spectator* (25 March 2014)

Recruitment of HACC Clients

Through their own experience in the project, participating HACC staff were well placed to explain the benefits of the project to their clients. HACC staff collected baseline data with their clients and undertook a household energy efficiency assessment of the clients' home. This then informed the identification and prioritisation of energy efficiency implementations in the home. The Project Manager and Project Officer, along with the HACC Staff worked together to arrange for the energy efficiency improvements to be made at the HACC client homes. A majority of this work involved engaging local contractors/suppliers. Two hundred dollars for each participant was allocated to implement priority changes, which was used for the purchase and installation of equipment such as draught proofing & weather sealing, ceiling fans and installation of window shading as required. Throughout this process, HACC staff continued monitoring and supporting energy efficiency actions

and home adaptation with their clients through their ongoing relationships. Post-implementation data collection occurred after the energy efficiency improvements had been made.

Clipping 3: Program teaches energy-saving measures

Program teaches energy-saving measures

MORE than 300 Home and Community Care (HACC) clients are now savvy household energy savers, after taking part in a pilot program by Glenelg Shire Council.

The Glenelg SAVES (Seniors Achieving Valuable Energy Savings) project is an initiative of Council's HACC team to educate carers and their clients about energy-saving in the home.

Funding from the

Department of Industry enabled 35 Community Support Workers (CSW) to learn about the latest energy saving measures, how to assess clients' homes and how to arrange for the installation of items like LED lights and new blinds and awnings (for improved insulation), as well as door and window weather proofing.

During September, HACC staff will contact

all participants to survey how the energy-saving measures have affected each household. Those who take part in the survey will go into a draw to win a \$50 grocery voucher.

The project coordinator would like to prepare some case studies to include in the project's final reporting. If you are able to assist, please contact your HACC worker or



Maureen Crisp on 5522 2204. The Glenelg SAVES project, which will continue until March 2016, is also

supported by Federation University and the Southern Grampians Glenelg Primary Care Partnership.

Source: *GS Community News* (Spring 2015)

Staffing and Resourcing Requirements

The project was managed through SGGPCP where a Project Director (0.1EFT) was employed to oversee the strategic direction of the project and provide project management advice and assistance to other project staff. The SGGPCP also employed a Project Manager (0.5EFT), who was responsible for the co-ordination of the advisory group, reporting requirements and operational requirements of the project. The Glenelg Shire employed a Project Officer (0.2EFT) who was located within their HACC program to facilitate a close relationship with HACC staff and management, and acted as an advocate of the project and main contact for HACC staff.

HACC staff (including support, management and maintenance) were invited to an information session to outline the project process and impacts and to recruit HACC staff to undergo the training program. The Glenelg Shire resourced staff to attend information sessions and training and provided a venue to enable access for all staff. Furthermore, each staff member was allocated three hours per household to conduct the home energy efficiency assessment and collect data; this included their own and client homes.

Collection and analysis of project-related data

A significant component of the project was the collection and analysis of data, which was completed by FedUni. The University worked with HACC staff to collect data. FedUni then managed the analysis and synthesis of data and assisted with reporting and research requirements.

A longitudinal design was employed, with measurements at baseline and at intervals throughout the remainder of the project. The three major data sources were used for this study included: energy data, participant surveys and climate data. This project element included the collection of data required for Annexure C LIEEP data items. Qualitative data was also collected through discussions with HACC workers, consortium members and local contractors involved in the project.

Dissemination of Results

Information dissemination is critical to partnerships, and when working with vulnerable groups of people in the community, it is essential to disseminate information in a meaningful and practical manner. Information content and delivery is one of the key barriers identified for Low Income Households with regards to household energy efficiency. The Glenelg SAVES project consortium was very aware that although the Glenelg SAVES project was reported on extensively to the Department of Industry, Innovation and Science, and more broadly through the LIEEP CSIRO reporting, these reports were not going to be accessible to our project participants, and other stakeholders. We were also preparing abstracts and papers for journals and conferences, however once again, we were missing a key group of people. A short film of approximately six minutes, featuring actual participants from the project (refer Figure 3, overleaf), telling their story and experience, was going to provide meaningful information on the project. From previous experience, producing a short film, has a far greater reach, to an unlimited audience, than formal reports. Furthermore, a short “project report on a page” will be produced for participants and other stakeholders in appropriate formats.

Figure 3: Glenelg SAVES short-film (screenshots)



2. Methodology

The following section summarises the research design and methodology used to achieve the study's objectives. In particular, this section explains the type of evaluation design, data collection and analysis procedures, and study participants.

2.1 Evaluation Design

For the project's evaluation, FedUni developed theoretical and conceptual frameworks to guide the design and administration of survey instruments; collated and uploaded data into CSIRO's national LIEEP database; and undertook primary and secondary data analysis to understand the project's effectiveness. This approach provided a systematic procedure for collecting and analysing trial information. The evaluation was designed to assess changes in energy use and other important attributes (e.g. knowledge, attitudes and participant satisfaction) related to the Glenelg SAVES project. The methodology applied to the Glenelg SAVES evaluation allows for evidence-based policy making by studying questions such as:

- What influence did the Glenelg SAVES project have on energy use behaviour of HACC staff and clients?
- What influence did the Glenelg SAVES project have on HACC staffs' knowledge and ability to provide advice on household energy efficiency opportunities?
- Which types of participants benefited most from the Glenelg SAVES project?
- What types of low-income consumers are attracted to energy efficiency programs and technologies?
- What factors influence adoption of energy efficiency technologies and curtailment behaviour?
- How does program participation influence the drivers of energy use behaviour?

Theoretical Framework

Existing studies on household energy behaviour are typically based on interdisciplinary concepts from economics, psychology and sociology. The 1970s energy crisis in the United States prompted increased interest in understanding how households could reduce energy consumption in response to increased energy costs (Stern, 2002). This led to a body of research designed to understand the main factors influencing energy consumption behaviour. The primary purpose of such studies has been to stimulate behaviours that are more energy efficient and/or will reduce energy-consuming behaviours. Despite the prevalence of research addressing such issues, understanding energy

behaviour still presents many complexities. Such issues include difficulties in identifying and measuring the factors that influence energy-consumption and the nature of each influence on behaviour. Stern (1992) suggested potential factors include psychological, social structures, economic, technological and other variables. Similarly, Abrahamse et al. (2005) propose that energy consumption is a complex interaction between macro-level factors (e.g. technological, economic, demographic and institutional factors) and an individual's perceptions, preferences and abilities.

Barr et al. (2001) sought to provide a broader understanding of environmental behaviour, through a framework that suggests consumption is mainly influenced by social and environmental values, situational variables and psychological factors. The link between values and conservation behaviour builds on previous studies, which have found that social values are associated with environmental practices (Cameron et al., 1998; Corraliza & Berenguer, 2000; and Stern et al., 1995). A wide range of social science studies have also examined the influence of environmental values on behaviour. In general, such studies have failed to provide conclusive evidence that support the effect of values on behaviour (e.g. Steel, 1996; Scott and Willits, 1994; Vining & Ebreo, 1992). A possible reason for the failure to identify such a relationship could be attributed to the moderating and mediating effects of situational variables (e.g. physical infrastructure, geographical location, socio-economic structure and knowledge) or psychological variables (e.g. attitudes, social norms), which have received considerable attention in the past forty years (Ajzen & Fishbein, 1978; Stern et al., 1992).

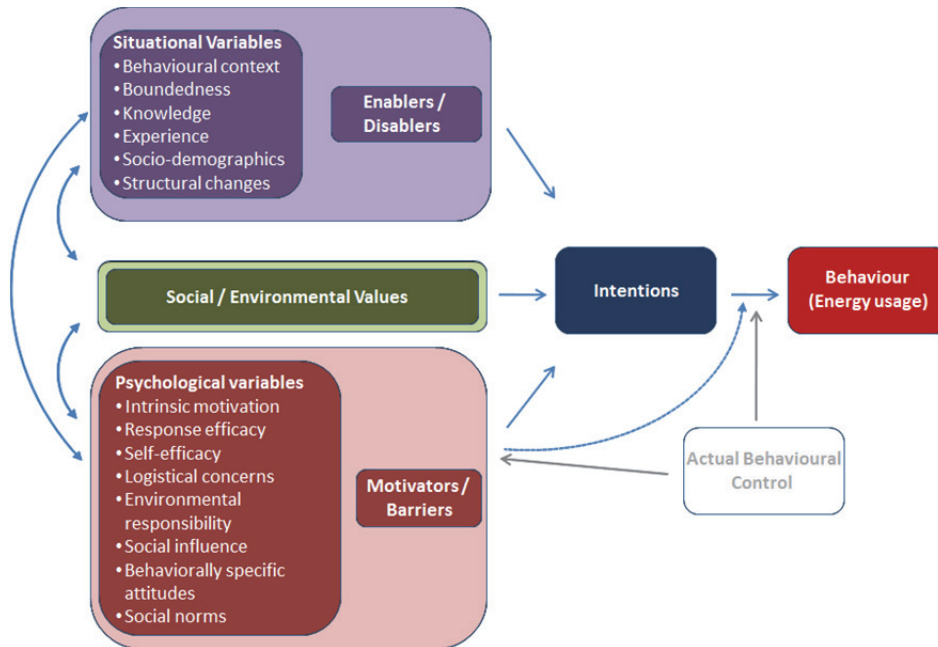
Despite the prevalence of literature into the determinants of energy consumption, such factors are rarely taken into consideration when evaluating the effectiveness of energy programs. Indeed, Abrahamse et al (2005) found that only 25% of studies reviewed controlled for behavioural determinants. Such omissions inhibit the ability of these evaluations to investigate if the differences observed in post-program energy consumption are caused by the intervention itself or by something else (i.e. counterfactual explanations). The Glenelg SAVES evaluation considered such confounding effects by comparing the influence of project interventions in the context of other determinants of energy use. Such determinants outside the project's interventions have been taken into consideration in the development of this evaluation's conceptual framework.

Conceptual Framework

A review of the literature highlighted the need to understand the characteristics of households as well as the context in which they live in order to understand energy behaviour and how it might be changed. The study's conceptual framework (Figure 4, overleaf) proposes that energy behaviour (and behavioural intentions) is a function of situational variables, social/environmental values and

psychological factors that motivate or act as barriers for households to use energy in a particular way. This conceptual framework was used as a basis to guide the evaluation and construction of associated survey instruments. This framework builds on other research undertaken by FedUni into identifying and understanding the determinants of conservation behaviour.

Figure 4: Conceptual Framework



Adapted from Barr & Gilg (2007), Ajzen & Fishbein (1980, 2005) and Lynch et al. (2013).

The evaluation design developed by FedUni researchers is a well-grounded theory-based approach that ensures policy relevance: it not only answers what works but also why (or why not). The framework maps out the sequence from inputs to impact and allows for the identification of barriers that may influence the project’s outcomes. Importantly the framework evaluates the Glenelg SAVES trial not simply in terms of observed changes in energy use but rather in terms of what happened to energy use because of the project compared with estimates of what would have happened in the absence of the trial (i.e. counterfactuals).

Ethics Approval

Approval for the Glenelg SAVES project was obtained from Federation University Human Research Ethics Committee on 12 June 2014, and approval for the qualitative evaluation of the project was obtained on 21 September 2015 (refer Appendix F for ethics application). Although, ideally data for a study such as the Glenelg SAVES project would be collected by an independent third party, previous work and anecdotal reports from the Glenelg Shire reveal that using a HACC worker who has an

established relationship with the client was the best way to gather data and was the foundation for this project.

In accordance with the National Statement of Ethical Conduct in Human Research, the following protocols were put in place to ensure that participation was purely voluntary and not influenced by the existing relationships between the Glenelg Shire, the HACC workers and the HACC clients during the consent process:

- HACC clients were encouraged to discuss their participation with someone who is able to support them in making their decision
- Where potential participants were especially vulnerable or powerless, HACC clients were encourage to appoint a participant advocate
- HACC staff and consortium members were briefed to take particular care throughout the research to minimise the impact of any dependency
- As part of the consent process, persons who declined to participate in or decided to withdraw from the study were ensured that they would not suffer any negative consequences, such as unfair discrimination, reduction in the level of care or any other disadvantage
- HACC staff were also informed that if they declined to participate in or decided to withdraw from the study they would not suffer any negative consequences, such as unfair discrimination, dismissal from employment or any other disadvantage

All participants were provided with a plain language information statement (refer Appendix F: Ethics application) outlining the Glenelg SAVES project, the research procedures – what participation would involve, the risks of participation, the available support and data protection. Written consent was obtained from the participants (or their advocate if appropriate) prior to their involvement in the research. Copies of the consent forms are provided in Appendix F: Ethics application.

2.2 Data Collection

The voluntary nature of participation in energy efficiency programs often means that a true experimental design with randomly assigned treatment (i.e. intervention group) and non-treatment (i.e. control group) groups is not possible. A number of factors relating to the context of Glenelg SAVES prohibited the use of a randomised control trial design. Such factors included:

- Limited number of HACC staff and clients for a control group
- Randomising a control group from such a vulnerable group within the community could potentially be perceived as exclusion and have a detrimental impact on wellbeing

- If another shire was able to participate and act as the control group there would have been a significant cost to the project to gather data for comparison and provide incentives for participation
- Discrimination and damage to relationships both between organisations and staff/client relationship

Due to these circumstances, an interrupted time-series design² was employed, with measurements at baseline (and before baseline for some measures) and at intervals throughout the rest of the project. Three major data sources collected and monitored for evaluating project outcomes were:

- Energy use
- Participant information
- Climate data

Energy use:

The data requirements for the evaluation required energy use data from participating households. This analysis used meter data provided by Powercor (the region's electricity distributor). Information about pre-project energy use was collected retrospectively, for up to three years. This pre-project energy use (adjusted for climate variations) was used as a baseline to assess changes attributable to Glenelg SAVES participation. Powercor were unable to provide tariff details for participating households and therefore, it was not possible to convert electricity use into monetary values.

Participant information:

To collect information about the determinants of household energy consumption, baseline surveys were administered to all participating households as part of the energy assessment process (refer Appendix G: Baseline survey). HACC staff also administered a face-to-face follow-up survey (refer Appendix H: Follow-up survey) with participants to measure changes in household characteristics, adoption of recommendations, project satisfaction, free-ridership, spill-over and other suitable items. These surveys included relevant LIEEP Data Items³ (refer Appendix E) and other determinants of household energy use (e.g. attitudes and barriers relating to energy efficiency). The study's key constructs relating to attitudes and opinions were operationalised by using existing scales from the literature. For example, attitudes and opinions about reducing energy use were identified using Ajzen & Fishbein (1991) Theory of Planned Behaviour. Other key constructs such as satisfaction and

² Interrupted time series is a type of longitudinal analysis that can be applied when an intervention occurs at a specific point and the series is broken up by pre- and post- intervention periods (Glass & Wilson, 2008)

³ Relevant LIEEP data items were identified with support from the Commonwealth Scientific and Industrial Research Organisation (CSIRO)

knowledge also used validated scales. Such validated measures of attitudes/beliefs were used to complement LIEEP Data items such as 'barriers being addressed by trial', 'household comfort status' and 'empowerment status'.

Although, ideally data would have been collected by an independent third party, previous work and anecdotal reports from the Glenelg Shire reveal that using HACC workers that have an established relationship with the client was the best way to gather data and the foundation for this project. The HACC workers undertook extensive training (in accordance with Australian Market & Social Research Society's guidelines) to enable them to administer the survey in accordance with best practice research requirements. This training was delivered in the form of a DVD and HACC staff were given the opportunity to contact project staff before recruiting and collecting data from clients (refer Appendix I for DVD note booklet). Due to the flexibility required in the survey booklet (e.g. skipping back and forth between pages relating to different areas of the house) and the low computer literacy of participants, a paper-based survey booklet was used to collect data for the project.

Ideally long-term follow-up would be undertaken to assess the durability of changes to energy use; however, data collection and analysis needed to be undertaken at time frames that ensure successful report submission at this deadline. There are also concerns that extending the period of follow-up data collection would have resulted in a reduction of trial participant numbers due to morbidity and other natural attrition experienced in longitudinal studies (drop-outs, moving residence).

Measures of energy efficiency barriers focused on the extent that HACC staff and clients believe they are able to enact energy efficient behaviour. Such measures included the influence of the following economic and behavioural energy efficiency barriers:

- Credibility and trust in information sources
- Knowledge of cost-effective energy efficiency measures (i.e. imperfect information)
- Bounded rationality (i.e. clarity and accessibility of energy efficiency information, information and time constraints that lead to non-optimal energy-related decisions)
- Attitudes towards energy efficiency benefits
- Access to capital
- Perceived risk of energy efficiency investments
- Principle-agent relationships / split incentives
- Cultural influences (e.g. social pressure, normative behaviour)

Data collected from the follow-up survey was used to obtain post-audit energy use, changes to site characteristics, identify energy efficiency recommendations adopted and ascertain subjective

assessments of project effectiveness. To assess the influence of the project on alleviating energy efficiency barriers, measures were made during the baseline and follow-up surveys and discussed during the trial's qualitative research phase (refer below). Measurement of changes to the prevalence of these barriers, along with their influence on energy efficiency behaviour, is designed to provide a detailed understanding of how the project has influenced participant behaviour and outstanding issues.

The project's data collection activities were designed to minimise participant burden. Therefore, a balance was agreed upon between LIEEP data requirements and the length of surveys. With this objective, 30-40 minute surveys were developed with a focus on priority data requirements. Extra data relating to housing characteristics (e.g. appliances, insulation and materials) were also sourced as part of the Energy Assessment process. These surveys included a basic set of socio-demographic questions, short rating scales and simple plain language. The design and implementation of surveys followed Dillman's Total Design Method to ensure a rigorous approach to data collection.

Glenelg SAVES approached 1,000 households in the Glenelg Shire through training, education and home audit and adaptation. Over 300 households (as per low income selection criteria), including elderly residents, people with a disability, all living in a rural locality directly benefited from in home energy assessments and were provided with links to assistance for improving their energy efficiency.

A total of 22 HACC Staff and 306 HACC Clients undertook a home energy assessment and completed the project's baseline survey. As indicated by Table 2 (overleaf), HACC Staff undertook an energy assessment on their own homes from May-October 2014. The rollout of energy assessments for HACC Clients took place from August 2014-April 2015. In terms of the follow-up survey, 21 HACC Staff (96%) and 189 HACC Clients (62%) returned completed booklets.

Table 2: Date of home energy efficiency assessment by group

Town	Group			
	HACC Staff		HACC Clients	
	Count	%	Count	%
2014				
May	3	13.6	0	0.0
June	13	59.1	0	0.0
August	1	4.5	25	8.2
September	4	18.2	54	17.6
October	1	4.5	52	17.0
November	0	0.0	46	15.0
December	0	0.0	37	12.1
2015				
January	0	0.0	82	26.8
February	0	0.0	6	2.0
March	0	0.0	1	0.3
April	0	0.0	3	1.0
Total	22	100	306	100

The recruitment of staff to the Glenelg SAVES project was challenging at times, however as a set target had been agreed to, we were clear in the number of staff that had to be recruited. Staff numbers reduced between project planning and recruitment stages resulting in a higher percentage of staff participation required to meet the project objectives. The HACC staff had challenges in determining how they would fit the Glenelg SAVES project into their schedule, despite there being allowance for paid work on the project. The concept of the HACC role in Household Energy Efficiency was new to most of the staff and as a result, it took some time for staff to take full ownership of this new knowledge.

During the post-project interviews a number of staff noted that the idea of learning new concepts was foreign to them and therefore they were nervous to speak to clients about energy efficiency in the home.

In general work practice, HACC staff have a consistent allocation of clients. Due to the reduction in staff participating in Glenelg SAVES, HACC staff were responsible for clients other than their own and as a result, a new relationship had to be developed prior to participating in the project. Although this was not a long process, it was unexpected and led to some delays.

Climate data:

Variations in weather conditions have a major influence on energy use. To control for this influence, local climate data has been sourced from the Bureau of Meteorology (BOM). The most relevant meteorological measures are heating and cooling degree-days. Energy use data was adjusted, using a Normalised Annual Consumption (NAC) index, to control for temperature variations and therefore, allow for robust comparisons between pre- and post- project energy use.

Qualitative data:

Qualitative data was also collected through discussions (focus groups and in-depth interviews) with HACC workers, consortium members and sub-contractors in October 2015. All focus groups and interviews were digitally recorded with the permission of the participants. These discussions included:

- Four focus groups for HACC workers, two in Portland (group one – four workers, group two three workers) and one each in Heywood (two workers) and Casterton (four workers). In total 13 HACC workers participated. Each focus group ran for over an hour, with an average focus group length of 1 hour 8 minutes.
- Individual in-depth interviews with the training provider from Moreland Energy and the consortium members, two from the SGGPCP and two from the Glenelg Shire. The interview with the training provider was conducted by telephone and lasted 39 minutes. The consortium member interviews lasted on average an hour, ranging from 27 minutes to 1 hour 18 minutes, and all were face-to-face interviews.
- Six interviews with sub-contractors who were involved in the project, three from Portland, two from Heywood and one from Casterton. These short interviews lasted between 18 minutes and 31 minutes, with an average interview time of 26 minutes.

Data collected from these discussions was thematically coded and analysed by experienced FedUni researchers. This aspect of the research focuses on identifying recommendations for improving the design and administration of future energy efficiency programs targeted at low-income households.

2.3 Data Entry and Analysis

Data entry for the household surveys was undertaken through FedUni's computer-assisted data entry (CADE) system, which uses optical mark recognition (OMR) technology to simplify data entry, by minimising the need for manual entry by data entry operators. Before commencing any analysis, data was subject to a systematic and rigorous process to ensure the information to be analysed is 'clean'. All data sets were subject to stringent examination to ensure the negative impacts of survey

errors (sampling, coverage, non-response, measurement, specification and processing errors), missing data, outliers and violations to assumptions of statistical tests were mitigated. Such quality control procedures ensure that findings reported throughout the evaluation have a rigorous foundation.

The data analysis was directed toward identifying, quantifying and comparing the outcomes attributable to the project with regard to levels and patterns of energy use. These analyses included longitudinal statistical analyses of changes in energy use measures (such as average daily consumption) with appropriate consideration given to the potential influence of differing and changing participant characteristics and other confounding factors.

The following details the procedures undertaken to prepare the data for multivariate analysis required to evaluate the effectiveness of the Glenelg SAVES interventions:

Data Cleaning

Data cleaning and recoding is a necessary and often underestimated (sometimes overlooked) task in providing quality research. In its raw form, data collected is often described as “dirty” in that some data is missing, some contains extreme values (outliers) and some imputation and transformation is often necessary. Before proceeding with any analysis, data was ‘cleaned’ and decisions made as to which cases need to be excluded. For example, the following actions represent some of the steps taken to clean this data set:

- Data excluded from the analysis included:
 - households recording less than 40 weeks occupancy;
 - households showing extreme use (i.e. Average Daily Consumption (ADC) use was less than 1.0kWh or more than 100 kWh);
- Data Clarification: Clarification sought from participant for ambiguous responses;
- Data Standardisation: Raw data often needs to be standardised so meaningful comparisons can be made. Sometimes data also needs to be transformed (i.e. normalised) to enable more robust analysis.

The electricity use data collected for the evaluation required considerable cleaning, manipulation and transformation to enable required analyses to be undertaken. This development of specialist procedures and techniques to assure the data was useful and functional for analysis was a challenging and lengthy process. This experience is not unusual for secondary data as by definition, it is collected for another purpose. In the case of electricity meter data, this is mainly to meet

electricity market needs. In the formats delivered, such data did not fit comfortably with LIEEP database schema requirements, nor the analysis requirements related to the evaluation.

Missing Data

Missing value analysis was applied to explore the prevalence and nature of missing data. For analysis purposes, missing data was imputed using appropriate methods.

Screening for Normality

The distribution characteristics of the data was examined for deviations from normality. As expected, the study's key response variable, ADC, was not normally distributed, with a high positive skew. A log transformation of this variable was used to ensure the variable's skewness value falls within the recommended guidelines for assumptions of relevant statistical tests.

Modelling

Statistical models were primarily based on an interrupted time-series design. This procedure used a weather-adjusted Normalised Annual Consumption (NAC) index based on heating and cooling degree-days to control for the confounding effects of climate variation. The analysis also developed estimates of spill-over and free ridership in accordance with the U.S. Environmental Protection Agency's Model Energy Efficiency Program Impact Evaluation Guide. This approach is well accepted by the Energy Efficiency Program Evaluation community and specific techniques have been designed to develop statistically sound energy saving estimates attributable to project interventions. Following data cleaning and screening procedures, electricity data from 177 participants was used for this analysis.

2.4 Database design and management

FedUni maintained records of all project activities, all participants (HACC staff and clients) recruited into the project, and all energy efficiency recommendations adopted. The content of the database included:

- Household energy consumption data (from meter or billing data)
- Household and demographic data relating to LIEEP Data items
- Weather data (from Bureau of Meteorology data files)
- Household attitudinal and other data

FedUni have been responsible for all matters pertaining to data collection and monitoring, including data structures and data formats. All data available was provided to CSIRO by 1 December 2016 to meet their timeline requirements for reporting on the overall LIEEP.

The Glenelg SAVES Database resides on a dedicated FedUni server hosted by IBM. The server uses Free and Open-Source software including the “GNU/Linux” operating system and “MySQL” database management system. As part of the project team, a Data Manager was responsible for the management of the database. This role includes gathering data from Powercor and the Bureau of Meteorology, pre-processing of data, uploading of data to meet the Department’s requirements and generating inquiries for data analysis.

Glenelg SAVES generated large quantities of data. Table 3 details the records uploaded to the LIEEP database as of March 2016.

Table 3: Number of records (cases) uploaded to LIEEP database

TABLE	LIEEP TABLE DESCRIPTION	NUM OF RECORDS
GRANT_RECIPIENT	This record will uniquely identify a LIEEP grant recipient.	1
GRANT_RECIPIENT_STAFF	The grant recip. staff. Track interact. btw staff and participants	25
PROGRAM	A LIEEP program or trial conducted by a grant recipient.	1
PROGRAM_BARRIER	Barrier addressed by a particular program.	2
TARIFF	This captures the link between a meter and a tariff.	22
WORKSHOP	Record describing a community workshop or group training session	3
WORKSHOP_ATTENDANCE	Lists the participants that attended a given workshop	55
METER	This captures the detail of a utility meter.	363
NEM12	This captures 30 minute interval readings from utility electricity meter	29,306,638
INFORMATION	Details of an info pack or session provided to a participant	664
DWELLING	Details about the dwelling a LIEEP participant lives in.	332
PARTICIPANTS	Uniquely identified participant in a LIEEP program	332
INSULATION	Identifies the insulation in part of a house, it's type, etc	394
LIGHTING	Details the lighting in the dwelling.	332
PV_DETAILS	Contains details of any PV systems installed at a dwelling.	29
RECENT_MODS	Home mods prior to LIEEP that may impact energy consumption	506
AAS_EE_SURVEY	Attitudes To Energy Efficiency Survey	332
ENERGY_AUDIT	Record detailing an energy audit.	332
FUNDING_AGREEMENT_SURVEY	List of questions provided by the Dpt in the Funding Agreement	332
CASE_MANAGEMENT_INTERACTION	Ongoing series of interactions with a participant	332
APPLIANCE	Record capturing details of household appliances.	2,738