



## Home Energy Audit Toolkit

### HEAT Review December 2010

#### Climate Change Project Officer, Hobart City Council

#### HEAT Review at a Glance

**HEAT Available:** 26 Tasmanian Councils  
2 Community Organisations

**Total HEAT Kits:** 79

**Total Loans:** 698 (as of mid Nov 2010)

#### Feedback Forms - Key Findings:

##### 1. Borrower Feedback:

Information Source: 31% Community Service TV Advertisement.  
30% Media (state and local newspapers, radio).  
27% Councils' newsletters (principally Hobart's Capital City News).  
13% Other (Council staff, word of mouth, posters, etc).

Usefulness: 88 % found the kit useful.  
87% found it easy to use.  
90% easy to borrow (21% noted long wait).  
86% found the instructions easy to follow.

**2. Council Feedback:** Customer service staff expressed support for the program.  
Borrowing practice varies from council to council.  
More staff training required in the use of kit and borrowing procedures.  
Most Councils are experiencing significant waiting lists.

**Next (HCC):** Reorder Kits to meet extra state wide and interstate demand.  
Update Instruction and Information sheets.  
Update Excel HEAT 'Borrowing' spreadsheet for councils' use.  
Develop Household Energy Record Sheet to be included in kit.  
Investigate opportunities to better inform councils' staff on the use of kit contents and recommended borrowing procedures.

## The Home Energy Audit Toolkit

The **Home Energy Audit Toolkits** (HEAT) have been developed through the Southern Tasmanian Regional Authorities (STCA) Regional Climate Change Initiative (RCCI) by the Hobart City Council. At least one toolkit is available for borrowing from 26 Tasmanian councils as well as two community organisations. The toolkits can be borrowed at no cost. They allow households to undertake home energy audits in their own time and space and provide practical and affordable suggestions on how to save electricity and dollars by reducing electricity bills. The HEAT information sheets have been developed specifically for Tasmanian households and conditions. The toolkits complement other home energy audit services and programs.

The toolkits were accompanied by a CD, including promotional posters, copies of the information sheets, suggested loans procedures and an Excel spreadsheet to manage the waiting list and confirmed loans.

Each toolkit is housed in a rigid plastic box with each tool in a protective foam base. It contains:

Power-Mate	Enables you to measure the electricity consumption of all electrical appliances with a standard 3-pin plug. It is particularly useful for measuring the electricity consumption of appliances such as fridges; televisions, microwaves and computers and their standby consumption.
Infrared thermometer	The Infrared thermometer can be used to check for leaks around fridge doors. It can also be used for checking for adequate ventilation behind the fridge/freezer and for checking the effectiveness of ceiling insulation.
Stopwatch	Assists in determining the flow rate of hot water from showers and taps.
Magnetic compass	Assists in identifying: (i) the orientation of your home so that you can consider what may need to be done to tap into the northerly sun more efficiently and (ii) suitably oriented roof space for hot water and electricity solar panels.
Room thermometer	Measures air temperature around your house, your hot water system, fridges and freezers.
13 Laminated instructions and information sheets	Developed specifically for Tasmanian households they provide instructions on how to use the tools included in the kit and suggestions for do-able energy efficient actions for various appliances and/or activities.

## Review Process

The toolkits have been available to borrowers since either February 2010 (12 councils and 1 community organisation) or June 2010 (26 councils and 2 community organisations). This was considered a long enough period to allow for an initial assessment of the program's usefulness and the identification of any strengths and weaknesses.

The review process considered both the lenders (councils & community organisations) and the HEAT borrowers experience and levels of satisfaction with the kits to date. The review included both qualitative and quantitative elements, and focused on developing an understanding of issues, modifications and additions that could be made to improve customer satisfaction, borrowing processes and support for borrowers or lenders.

All participating councils and community organisations were emailed with a request to forward a copy of their Excel booking sheet or equivalent and any user feedback forms not already forwarded to HCC and provided with a staff feedback sheet for electronic return.

The HEAT Review project officer made follow-up phone calls to discuss the program with officers responsible for the lending program in their organisation. The responses were entered on a spreadsheet as council feedback, borrower feedback and postcode distribution. (Appended)

## Review Results

### Loans by mid November 2010

Council	Joined	Kits	Loans	Council	Joined	Kits	Loans
Break O' Day	Jun	2	7	Kentish	Jun	4	19
Brighton	Feb	1	13	Kingborough	Feb	8	61
Central Coast	Jun	1	10	Latrobe	Jun	2	18
Central Highlands	Feb	2	3	Launceston City <sup>#</sup>	Feb	8	208
Circular Head <sup>#</sup>	Jun	1	1	Meander Valley <sup>#</sup>	Jun	2	13
Clarence City	Feb	4	50	Northern Midlands	Jun	3	16
Derwent Valley <sup>#</sup>	Feb	1	20	Sorell	Feb	2	20
Devonport	Jun	3	20	Southern Midlands	Feb	1	9
Dorset	Jun	2	5	Tasman	Feb	1	4
Flinders <sup>#</sup>	Jun	2	6	Waratah-Wynyard <sup>#</sup>	Jun	1	16
George Town	Jun	1	2	West Coast	Jun	1	6
Glamorgan Spring Bay	Feb	1	4	West Tamar <sup>#</sup>	Jun	2	18
Hobart City	Feb	15	104	NRM North*	Jun	4	6
Huon Valley <sup>#</sup>	Feb	2	29	Sustainable Living Tas	Feb	1	10

\* NRM (Natural Resource Management) North supported the use of the kit in a number of councils by providing the kits and having the NRM officers coordinating the process.

<sup>#</sup> One week borrowing period

**TOTAL KITS:** 79  
**TOTAL LOANS:** 698 (as of mid Nov 2010)  
**ADDITIONAL TOOLKITS REQUESTED** 45 (as of Dec 2010 – includes interstate orders)

## Qualitative Feedback

### Council Feedback on Borrowing Procedures:

Overwhelmingly, the 'front of house' staff in the participating councils support the program and indicated that they found it worthwhile experience to be part of a positive program/service to local householders.

Long waiting lists were cited as an issue and seven councils have shifted to a one week loan period (from the two week loans) to deal with the long waiting list. They reported that they have found this to work well, in particular Launceston which has the greatest number of loans (208) overall and a minimal waiting list. Launceston is also using its in-house booking system. Hobart is trialling 'one-week-borrowings' in Feb 2011, and is seeking feedback from borrowers on the effectiveness of 1 week loans. It will provide the results of the trial to all Councils to enable them determine suitable borrowing periods and to reduce waiting lists.

Several councils are using a manual loans system, have created their own spreadsheet or have adapted the supplied Excel spreadsheet by adding a 'comments' column to record phone calls to borrowers, for

example. It is noted that any changes to the issued spreadsheet disables other elements such as linkages between sheets according to the HCC designer. A number of councils commented that they were unaware of elements of the spreadsheet and had not been briefed on how to use it.

Feedback suggested a number of improvements to the spreadsheet including an automated transfer of borrower details once the loan is confirmed, provision of a 'comments' field to accommodate notes re phone contact attempts etc. and removal of an error message. This error message is caused by local changes made to the spreadsheet, according to the designer.

Three councils are requiring a refundable deposit of \$20 or \$50 and one is raising an invoice for the cost of replacement which is cancelled on return of the toolkit. It is notable however that no lender has experienced serious damage to the tools or non-return of the toolkit. This is probably due to the borrower form which makes clear the financial obligations on non-return and requires ID and signature of borrower. Several officers reported that the TV advertisement did not make clear that the toolkit was for loan only and several people had not been prepared to wait to borrow it.

Dispersed communities such as the East Coast (Glamorgan Spring Bay) have problems with part-time council offices or the absence of an office in population centres making organising loans difficult.

#### **Borrower Feedback:**

The 'Borrower Feedback Form' is not distributed by all councils and most that do distribute feedback forms report low or nil returns but also report positive verbal comments from borrowers. Southern councils had the highest rate of return of the feedback sheet.

One council officer (Devonport) reported that borrowers often comment on the information sheets being too difficult. Another Council officer (Launceston) described the information sheets as the most useful part of the kit. Most borrowers used the Power Mate, radiometer and thermometer; several commented that they did not use the compass or stop watch.

Kentish Council in collaboration with KEENER, a community Transition Towns group, has developed additions to the feedback form to include householder actions and measurements.

#### **Response to the Toolkit**

The borrower feedback forms indicated an overwhelmingly positive response to the toolkits. The following indicates responses to individual questions:

- 87 (88%) found the toolkit useful.
- 76 (87%) found it easy to use (12 people identified problems with the Power-Mate)
- 81 (90%) easy to borrow (19, 21%, noted the long wait)
- 84 (86%) found the instructions easy to follow.

Whilst the feedback was reasonably coarse, it was gleaned from the qualitative feedback (see page 5 & 6) that the negative responses were due to the technical nature of the toolkit i.e. operation of the Power Mate, following instructions that were complex and dense.

The issue of complexity and density was confirmed by the project officer who ran a sample of the information sheet text through a readability tool which indicated that high levels of literacy are needed for

much of the text. Despite this, as noted below, most users providing feedback found the instructions easy to follow. Many borrowers were well able to use the tools and assimilate the information but there are potential borrowers who could be assisted, if the service is to meet the needs of a wider range of households.

An issue was also identified regarding the use of the thermometer in checking the efficiency of domestic fridges. In relation to the thermometer instructions the project officer consulted with the Hobart City Council's Environmental Health staff who advised that both methods (placing the thermometer in a glass of water or in the air in the fridge) are appropriate for domestic fridges but recommended leaving the thermometer in the fridge for several hours or overnight to ensure an accurate reading.

**The following comments come directly from the borrower feedback forms.**

**Selected positive responses:**

NB Postcode in brackets

- 'It was very good. Thank you for offering this service!' (7265)
- 'It contains good information and the equipment is well thought out and very adequate to give excellent data to make savings.' (7303)
- 'I found the laminated tip sheets about how to manage your appliances and lights etc very useful.' (7112)
- 'I particularly liked the energy meter and the info sheets on household appliances.' (7112)
- '...interesting to find out what usage items have when not turned off at p/pt.' (7113)
- 'I knew a lot from 'theory' – now this kit helped me to SEE it, practically, and I thank you for the opportunity you created for me and my family' (7030)
- 'Measured power usage for all appliances, found cold spots in ceiling insulation.' (7000)
- 'Very useful, accurate, easy to use and convenient. And free!!! Thank you!' (7004)
- 'The Power Mate took a while to learn but all information is there....Good initiative.' (7023)
- 'A good initiative of the Council'. (7054)

**Selected negative responses:** NB Postcode in brackets

- 'Takes too long to sort out.' (7277)
- 'Hard to use especially for older people.' (7310)
- 'Too much mucking about to check what commonsense can tell one.'
- 'The Power Mate is a very complex piece of equipment.' (7109)
- 'Each time the Power Mate was operated it needed two people to read the instructions. (7277)

**Other comments:**

- Information sheets not good for B&W copying
- a lot of reading
- a long wait
- more useful in winter

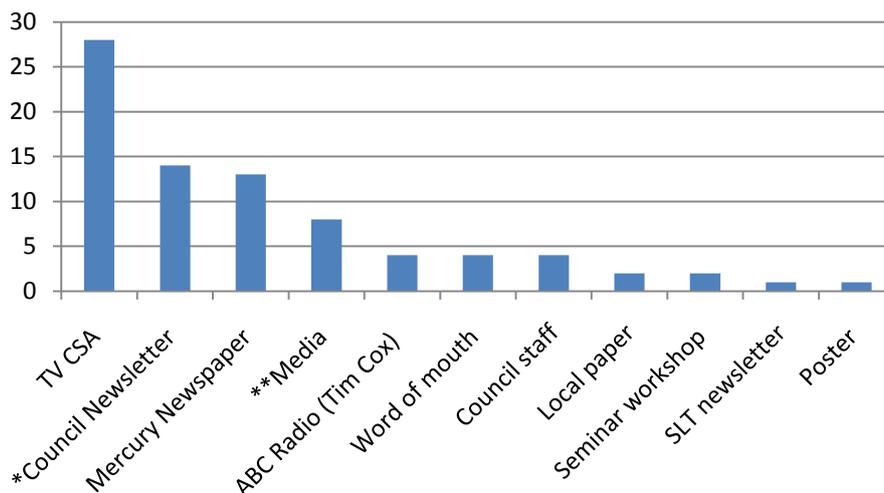
- box too elaborate and large
- needed more than 2 weeks
- looking for tool for testing for draughts

**Suggestions for Improvement:**

- Summary record sheet for home audit – this was noted by several users.
- Worked examples of cost of power for specific appliances
- Location for buying own equipment – thermometer, Power Mate
- Information on how to insulate hot water cylinder
- Links to websites for rebates, general sustainability information, home renovation, energy efficiency
- Clearer instructions for radiometer, Power Mate
- Comparison data on old and new appliance energy use
- Information for next appliance purchase
- Information on passive solar design
- Information on off-peak options
- Tool for testing microwave
- Simple summary sheet of suggestions
- Demonstration of how to use the tools – DVD
- Change to room thermometer instructions: needs to be placed in water in fridge to read accurately for food.

**Information Source**

The ‘Borrower Feedback Form’ also invited respondents to indicate how they became aware of the toolkits. The results are summarised in the table below:



\* 11 of the 14 ‘Council Newsletter’ responses identified the HCC ‘Capital City News’ as the information source  
 \*\* “Media” is included as a category as it is unclear from the feedback forms the type of media referred to – it is expected that this would relate to either TV or radio.

The Community Service Advertisement (CSA) TV was the dominant source of awareness, followed by media (predominantly newspapers) and then individual council newsletters and notices. This is consistent with anecdotal feedback from council officers.

Several councils noted that the CSA TV ads were producing as many responses as they could cope with and were not doing any separate advertising.

This suggests that CSA TV be retained as the predominant vehicle for promotion of the HEAT within the community, followed by promotion in local council newsletters and media on a needs basis i.e. when waiting lists have been reduced.

## Summary and Recommendations

It is clear that the Toolkits are meeting a real community need which will increase as electricity prices continue to rise and that borrowers appreciate the service as a council initiative. They are accessible to most borrowers but there is scope for improvement, in both the borrowing procedures and toolkit information sheets.

Action	Who	Timing	Status
• Revision of HEAT information sheets and distribute to all Councils.	Hobart City Council & Consultant	Feb 2011	Underway
• Development of a Household Energy Record Sheet for borrowers to keep.	Consultant	Feb 2011	Underway
• Revision of HEAT Support Information and bookings spreadsheet and distribute to all Councils.	Hobart City Council	Feb 2011	Underway
• Communication of appreciation of the work and support of customer service staff.	All Councils	Mar 2011	High
• Explore potential for community workshops	Hobart City Council / Climate Connect submission	Dec 2010	Grant submitted
• Investigate development DVD demonstrating use of each tool (pending identification of funding source).	Hobart City Council	TBC	Medium
• Review and continue 2011 CSA TV advert	Hobart City Council	Jan 2011	Requested
• Undertake another bulk purchase HEAT	Hobart City Council	Jan – Feb 2011	Underway
• *Consider review of borrowing period to 1 week from 2 weeks to reduce waiting list	All lenders using 2 week loan	2011	Discretionary

\* Hobart City Council is trialling 'one week borrowing' in Feb 2011 and will provide results of the trial to all councils participating in the HEAT program.