

# **Submission to the NT Government on a Northern Territory Strategy for Greenhouse Action**

Darwin and Palmerston Cool Community Project  
Steering Committee

Desert Knowledge Australia Cool Community Steering Committee

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## **EXECUTIVE SUMMARY**

Household emissions are but one of several key greenhouse areas that should be dealt with in the NT Greenhouse Action Strategy. We are pleased that the NT Government believes it has a key role to play in the following two areas (p10):

- Promotion and awareness of greenhouse issues and delivery of information which meets the needs of the community.
- Facilitating and promoting community-based greenhouse emission abatement activities.

Northern Territory households can play an important role in the overall reduction in greenhouse gas emissions. The Darwin and Palmerston and the Desert Knowledge Cool Communities projects have already demonstrated this at a local level. Between these two projects there are currently 220 households involved in greenhouse actions.

Results from 27 Darwin households for which we have collected electricity and fuel use data over the last six months, indicate that on average each household will save 1.51 tonnes of carbon dioxide emission over the course of 12 months. Most of these households have received a home greenhouse audit from one of our 7 trained auditors.

In February 2003 a Preliminary Abatement Report was released for Cool Communities nationally. In this report 6 households from Desert Knowledge Australia were shown to have made changes in their lifestyles that would amount to savings of 1.32 tonnes of carbon dioxide emissions for a year. There is a more detailed Abatement Report being worked on at present in which information from 65 households from Desert Knowledge Australia will be assessed, along with 25 households from Darwin and Palmerston.

We, the members of the Darwin and Palmerston and Desert Knowledge Australia Cool Communities Steering Committees, challenge the NT Government to join in partnership with the Cool Communities project to further assist households in reducing greenhouse gas emissions. Some concrete ways of demonstrating this commitment would be:

- Conducting public information sessions on reducing greenhouse emissions;
- Providing financial or in-kind assistance to the Cool Communities Projects so that we can extend the audit service to more households;
- Reviewing how more assistance can be provided for alternative transport arrangements

## INTRODUCTION TO THE COOL COMMUNITIES PROJECT

Cool Communities is a joint initiative of the Australian Greenhouse Office and conservation councils in each state and territory. The aim is to reduce greenhouse gas emissions from Australian households through promoting a culture of greenhouse action at the community level. There are currently 22 Cool Communities around Australia with three situated in the NT – Darwin and Palmerston, Desert Knowledge in Alice Springs and Ikuntji Community Government Council at Haasts Bluff.

### **Darwin and Palmerston**

The Darwin and Palmerston Cool Community is a collaboration between Parap Residents Association, Ludmilla Creek Landcare Group and the Environment Centre NT. In early 2002 a community planning process was initiated to draw up a community action plan. A number of public meetings were held and feedback was received from interested people and organizations such as the Darwin City Council, PAWA (as it was then called) and the NT Government. The project, formally launched by the Chief Minister in June 2002 at Parap Markets, was initially restricted to the four suburbs of Parap, Fannie Bay, Ludmilla and The Narrows. In January 2003 a decision was made by the local Steering Committee to open it up to all households in Darwin and Palmerston.

Our aim is to recruit 100 households into the project (we currently stand at 70), each of which commits to a target greenhouse saving of 750kg over the course of 12 months. To help them achieve this goal, Cool Communities provides the following:

- a baseline emissions calculation for each household and a Cool Household Star Rating (see Appendix C). To do this we collect electricity billing and fuel use information from the householder for the previous 12 months. If a household has not retained its electricity bills, we pay PowerWater for a report containing billing data going back 5 years if possible.
- a start-up folder full of energy saving ideas and information.
- a magnetized fridge chart which households can use to track their emissions over the 12 month period. We simply ask that households read their electricity meters once a month and record fuel purchases for their car(s). This data is then returned to the project on a quarterly basis and used to calculate greenhouse savings.
- a subsidised greenhouse audit from one of our seven trained auditors. Audits cost \$25 (or free for concession card holders), whilst auditors receive \$100 per audit. As of March 2003 more than 30 audits had been performed. Households receive a comprehensive audit report (see Appendix D for a sample) containing recommendations on how to save greenhouse emissions and money.
- an opportunity to apply for up to \$300 in expenses reimbursement for any greenhouse actions that will help households to achieve the 750kg target. The first 50 households can receive \$300 whilst the second 50 households to apply can receive up to \$200.
- Cool Household discounts on greenhouse-saving products and services. Negotiations for discounts are ongoing with suppliers in the Darwin and Palmerston area.

- An opportunity to attend community forums where householders can share energy-saving ideas and information and motivate each other. Feedback from the three forums we have held so far has been extremely positive – ‘the project is great – best bits are that it builds community feeling and motivates us to do the right thing’; ‘about time something like this happened’; ‘good to know there is a group of like-minded people with knowledge and to provide support’.

### **Desert Knowledge**

Whilst the Desert Knowledge Australia Cool Community in Alice Springs combines many of the same elements as the Darwin and Palmerston project, such as a household audit program, community forums and workshops and discounts on energy saving products, it also differs in some ways. Desert Knowledge Australia has been able to recruit more households from its wider catchment area. Households are not expected to do their own monitoring, but the formal measurement process required by the Australian Greenhouse Office consisting of a Pre and Post-Program survey has been rigorously applied. Audits are free for householders whether they have a concession card or not. A list of recommendations on how to save greenhouse emissions is left with householders at the time of the audit, rather than a written report arriving later. Auditors are paid \$35 per audit rather than \$100 as they are not expected to provide householders with such a high level of detail and quantitative data. In both Alice Springs and Darwin, however, auditors have been voluntarily making follow-up calls and visits to see how householders are getting on implementing their recommendations.

Other successful activities that have been set up include solar hot water and retrofit rebates and the **Cool Living Demonstration House**, which has been set up to provide an example to the general public of how to live sustainably in the arid zone and has attracted an average of 200 people at each month’s open day. Another great success of this community is the range of partnerships that have been struck up with local businesses, offering incentives and discounts to purchase low to high cost energy/water efficient goods, including items such as car servicing.

## **GREENHOUSE SAVINGS BY COOL HOUSEHOLDS TO DATE**

Appendix A summarises the emissions savings from 27 Darwin Cool Households thus far (20 of which have already had an audit completed on their home). For these households we have at least two months of fuel use and electricity consumption data.

**The projected annual saving over a 12 month period is 1.51 tonnes of greenhouse gas per household. For this group of households this represents on average a 12.6% saving on the previous year’s emissions.**

This is also twice our target saving of 750 kilograms per household. For \$50000 then, at this rate of saving, the Darwin and Palmerston Cool Communities Project will save 150 tonnes of greenhouse gas for the year from 100 households. Assuming that these households maintain this level of saving over 10 years this equates to an overall cost of \$33 per tonne of abatement compared to the ‘business-as-usual’ situation. We certainly believe that this is good value for money for a household program where savings are more likely to be incremental and hard-won, but which also, where there is an associated increase in awareness of greenhouse and energy issues, tend to be long-lasting.

As previously stated the Desert Knowledge Australia Cool Community is relying on the formal measurement process that is required by the Australian Greenhouse Office. Preliminary results show the average annual reduction in greenhouse gas to be 1.32 tonnes per household. This is a 76% increase on the expected savings and equates to an annual saving of 264 tonnes for the target 200 households.

## **KEY FINDINGS FROM THE PROJECT RELEVANT TO AN NT STRATEGY FOR GREENHOUSE ACTION**

The following detailed information about savings made by households in Darwin is possible due to the reporting required from participating households. There are similar situations in Alice Springs but the reporting mechanisms do not allow for such a detailed breakdown.

Eleven Darwin households are projected to save more than 2 tonnes over the course of 12 months. New and effective actions undertaken by many of these households included:

- Turning off ceiling fans when not in the room
- Reducing use of the air-conditioner at night
- Putting a timer switch on the electric hot water system or turning off either altogether or on a daily basis. One household installed AAA-rated showerheads.
- Reducing pool pump running times
- Changing to compact fluorescent lights and switching off lights when not in rooms
- Not leaving electrical appliances on stand-by

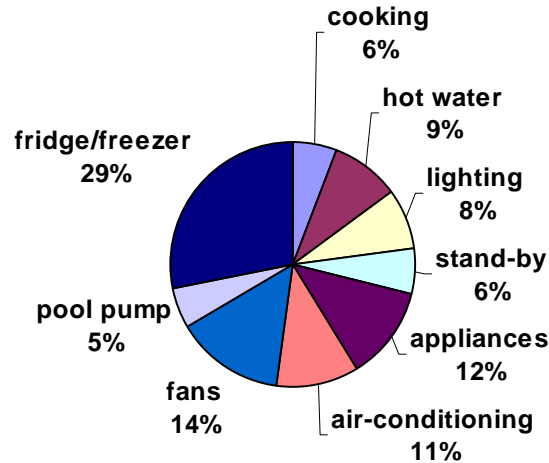
One household had their roof painted white and thereafter experienced much cooler temperatures inside the house. They also installed whirlybirds on the roof. Now they are projected to save over 4 tonnes for the year from reduced use of electricity, particularly from not resorting to air-conditioning.

Additional information about household energy use in Darwin can be gained from the completed household audit reports, which include a breakdown of electricity use in the home according to a number of categories (i.e. appliances, hot water, cooking, stand-by, fridges/freezers, air-conditioning, fans, pool pumps, lighting). This is extremely valuable information for both householders and policy makers. Figure 1 depicts the breakdown for 26 audited households and indicates that fridge/freezers are large consumers of electricity for many households in Darwin. It should be pointed out, however, that each household has a very different electricity profile. For instance, half of the households consumed minimal or no electricity for heating hot water as they had solar hot water systems installed.

Private vehicle use patterns have been more difficult to alter, hence the lower projected savings (compared to electricity) depicted in the Table in Appendix A. Nevertheless, we are finding that because households are becoming more aware of their fuel consumption through having to write down the number of litres they purchase in a log book, they are thinking more about their car use habits. Thus 21 households out of the 26 that own cars are projected to save on their fuel emissions. It should also be pointed out that the monitoring period (September 2002 – February 2003) also included the Christmas/New Year holidays. A

number of households went on long trips in their car. This has increased emissions significantly for these particular households but should balance out over the course of the year.

**Figure 1. Cool Household Electricity Use - Darwin**



Note that many of the greenhouse reduction strategies cited above are behavioural (such as switching off appliances at the wall and reducing pool pump running times) and do not require new technologies or additional expenditure on the part of householders. This highlights the need for an NT Government-backed community awareness campaign to encourage these kinds of behavioural changes. Focus group research carried out for Cool Communities amongst 'non-Cool Households' in Darwin (also in Alice Springs) in February 2002 found that:

- There is a low level of understanding in the community regarding the nature and causes of the greenhouse effect and only a slightly better understanding of its effects, with a minority apparently understanding the issue.
- Most participants regarded greenhouse gases as a relatively important environmental problem.
- Most thought individuals, industry and governments should act to reduce greenhouse gases and believed the individual could contribute to reducing greenhouse emissions.
- Many participants appeared to have a good practical understanding of how they could conserve energy in the home and reduce waste. Reducing transport and electricity usage were understood to be priorities.
- However, knowledge of what to do was not leading many people to reduce emissions. Despite being reasonably aware of ways to reduce energy usage and greenhouse emissions, only a minority of participants appeared to be taking significant actions to reduce emissions. Reasons for this include existing habits and 'inertia', and the initial cost of some actions such as installing solar hot water and insulation (see Appendix B for a summary of this research by EnergyConsult).

This fairly low level of greenhouse awareness (and motivation to act) amongst Darwin residents is borne out by the fact that we were only able to recruit 50 households in Parap, Fannie Bay, Ludmilla and The Narrows out of 2900 in total. This was despite good publicity for the project and

a number of letterbox drops with Cool Communities brochures and a newsletter. Moreover, amongst the households that have been recruited a number of participants have commented that children and teenagers can be especially difficult to motivate to turn appliances off when not needed. This suggests that better educational materials in the home and at school are required.

Our auditors, through their face-to-face contact with householders and follow-up calls, are able to break down some of these barriers to action. We are fortunate to have a very talented and enthusiastic group of people who have received training in household energy auditing and have also undergone some training in communication skills. This training could potentially be extended to other energy efficiency enthusiasts in Palmerston, Katherine and Nhulunbuy in the future.

Other strategies we have used to address these barriers include, as already mentioned, asking householders to monitor their fuel use and electricity consumption. This assists in making the greenhouse issue more concrete to householders on a daily, weekly and monthly basis. The Cool Household star rating and benchmarking system also allows households to track their progress and to compare themselves with other households. Progress certificates for Cool Households have been well-received with comments heard such as 'I'm very proud of mine'. Our rationale is that households need continual feedback and support if they are to sustain behavioural changes over a long period of time.

Desert Knowledge Australia has been very successful in recruiting members. To start with there were mainly people from the existing networks that were getting involved. However as time went on and more people gained benefits from the activities more people became interested after hearing about the project. The most successful method for attracting people into the Cool Communities project has been advertising at the Cool Living House. The level of interest has shown that people in Alice Springs are keen to live in a more sustainable way.

## **FUTURE PLANS FOR THE PROJECT**

In the near term, events are planned to expand on the existing success of the Cool Communities Project. These include high achieving Cool Households opening their doors to other Cool Households, a trip to Channel Island power station, and a community BBQ.

In the medium term the facilitator is likely to be funded to keep working for another year, although additional Australian Greenhouse Office funding for more households to come on board is uncertain at this point. It may be possible to expand to another 25 households with redistribution of un-claimed financial assistance currently allocated to existing Cool Households. Alternatively, we could keep the current households involved beyond one year by letting them purchase the monitoring kit for the second 12 months (i.e. worksheets & fridge chart).

Desert Knowledge Australia will keep recruiting and would like to surpass the 200 household memberships that were originally intended. There are numerous events being organized including social BBQ's, food garden/composting workshop, a grey-water reuse workshop and a special offer morning at a local hardware store. Other activities will continue to be taken advantage of by the members such as rebates, discounts, information flyers and lots of publicity in local and national media. Community forums/events and information dissemination will be ongoing throughout the lifetime of both projects.

## **POSSIBLE NT GOVERNMENT GREENHOUSE ACTIONS**

There are many opportunities for the NT government to assist households to reduce greenhouse gas emissions. As noted above, raising awareness of the importance of household level action has been one of the most important components of the Darwin and Palmerston Cool Communities project. The NT government is well placed to expand this work in a variety of ways. Some of the possibilities include:

### **Household energy efficiency**

- An energy efficient display home in Darwin/Palmerston
- A new demonstration house in Alice Springs to complement the proposed new housing developments
- Public information sessions conducted at the energy efficient display home on reducing greenhouse emissions.
- The establishment of an independent (not department linked), organization to pro-actively provide advice on these issues to households, and to be responsible for promotional and educational issues. It could also be responsible for ensuring building code is linked to environmental issues. This could be located in an area such as the Office for Territory Development i.e. Innovation, Knowledge & Economy Unit.
- Establishment of a house energy rating scheme for the sale of dwellings
- A 'greenhouse' calculation and rating on PowerWater bills (as is currently in place in other states)
- Offer of low cost, subsidised household greenhouse audits and monitoring kits (separate to or partnered with us) – or at least some form of advisory service.
- Produce a mobile van that can be taken from household to household, conducting household environmental audits, training sessions at schools, other educational and awareness raising campaigns.
- Compulsory solar hot water heaters for new dwellings (with one spring button timer switch) and adoption of a challenging target to increase solar hot water use more generally – e.g. 75% of NT households to have solar hot water by 2010.
- Introduction of Greenpower
- In-kind funding such as some street level office space in the centre of Darwin and Alice Springs to act as a focus for this activity i.e. a one-stop shop.
- An architectural competition to design the most energy-efficient housing.

- Designation of one suburb as a 'Cool' or 'Green' Suburb to showcase the best in sustainable tropical and arid zone living.

### **Transport**

- More efficient public transport helpline
- Car use reduction strategy
- A travel demand management program which is beyond current resource limitations of our project but which could perhaps be linked with it
- Expanding public transport system – operating hours – e.g. flexible routes on late night and Sunday afternoon buses, & mini buses for shoppers and commuters between town and suburbs such as Parap.
- Finding ways to allow bikes to be taken onto public transport
- Improving usability of public transport system – e.g. widely distribute a free map containing all bus routes & stops and easy to work out timetables re connections (whilst still being very portable)
- Review bike path networks (incl. Bike lanes on roads) – e.g. a bike path is desperately needed along Trower and Bagot Roads in Darwin and Larapinta Drive in Alice Springs.
- Ensure all new developments have footpaths along at least one side of every road and are designed to reduce walking distances to common destinations like public transport stops
- Encourage car pooling through introducing 3 for free car parks (i.e. free parking if more than 3 people travel in the car).
- Encourage NT Government employees to have public transport vouchers as part of their contracts instead of cars
- Integrated land use and land use planning. There is a need for a thorough review of size of block limitations in order to encourage natural ventilation, although it is recognized that that this may discourage compact development and the minimization of transport distances.
- With the development of Palmerston our current transport system relies on cars and to a significantly smaller extent on a relatively slow bus service. An electric rail service has been suggested however this method relies on the passenger still requiring a car to travel to the station then change to the train causing delays and inconvenience and then when at the "station" in Darwin walking or changing to a bus to finish their journey. An alternative system, based on the Adelaide "O-Bahn" we believe better suits our environment. During peak periods a system using LPG buses ("Green") could operate through the Palmerston suburbs and then passengers without changing buses could continue to Darwin. In the Darwin CBD the buses can operate through alternate routes and maybe continue on and in a circular return route cover the Stuart Park, Parap and Fannie Bay areas back through the CBD and then via the O-Bahn

back to Palmerston. During off-peak periods the buses could operate on a feeder system only utilising a smaller interchange at the Darwin and Palmerston CBD's.

**Project Specific**

- Free household electricity consumption data from PowerWater.
- Financial assistance so we can extend the Cool Communities project to more households (possibly including Katherine and Nhulunbuy).
- The Project could be administered in part by a Northern Territory Government officer.

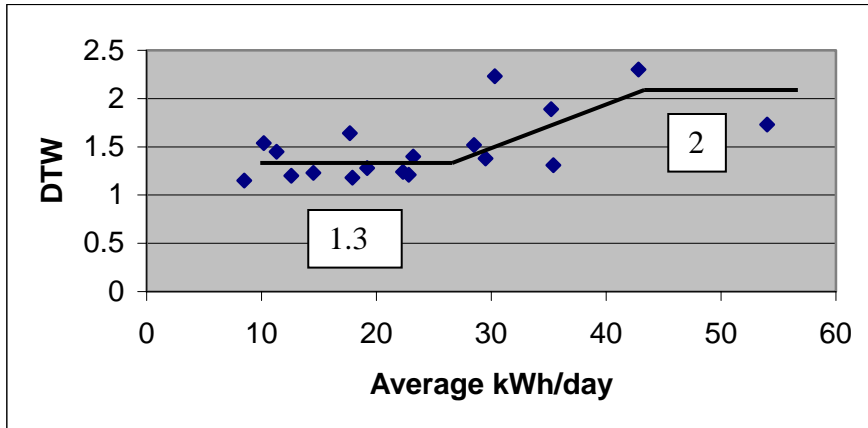
**Appendix A: PROJECTED ANNUAL EMISSIONS SAVINGS FROM COOL HOUSEHOLDS (data collected from September 2002 to February 2003)**

<b>COOL Household Location</b>	<b>ESTIMATED ANNUAL EMISSIONS SAVING ELECTRICITY<sup>1</sup> (kilograms)</b>	<b>ESTIMATED ANNUAL EMISSIONS SAVING FUEL USE (kilograms)</b>	<b>ESTIMATED ANNUAL EMISSIONS SAVING TOTAL (kilograms)</b>	<b>Estimated Total Saving as a percentage of previous 12 months emissions (%)</b>	<b>No. of months of data</b>
Harney St	758	679	1437	16.8	3
Philip St	1991	560	2551	20.6	3
Copeland Cres	4068	740	4808	21.7	5
George Cres	2770	1413	4183	43.7	4
Basedow Crt	826	426	1252	8.6	6
Conigrave St	3244	631	3875	20.3	5
Basedow Crt	4788	2174	6962	43.3	2 electricity 3 fuel
Allen St	674	911	1585	22	4 electricity 5 fuel
Nemarluk Dr	260	1490	1750	17.6	5
Cooper St	-215	-838	-1053	-15	4 electricity 5 fuel
Bremer St	1786	1000	2786	36	5
Porter St	1008	5478	6486	36	3
George Cres	-2027	-4190	-6217	-51.6	4
East Point Rd	210	NA	210	6.1	4
Mackillop St	373	436	809	15	5
Railway St	-624	-5138	-5762	-47.7	4
Barlow Pl	918	-1791	-873	-6.7	3
Mosec St	-764	982	218	2.5	5
Wells St	642	-1410	-768	-10	4
Wilkinson St	-428	1653	1225	13.4	4
Christie St	3295	-506	2789	25.9	5
Charlotte St	626	1442	2068	29	3
Kailis St	573	4109	4682	41.1	3
Mosec St	-306	4897	4591	36.6	4
Hudson Fysh Ave	900	13	913	15.1	3
Margaritis St	-97	259	162	1.4	3
Charlotte St	135	-151	-16	-0.5	4
<b>AVERAGE SAVING PER HOUSEHOLD<sup>2</sup></b>	<b>0.94 tonnes</b> (27 households)	<b>0.59 tonnes</b> (26 households)	<b>1.51 tonnes</b> (27 households)	<b>12.6 %</b> (compared to baseline)	

1. Figures are seasonally adjusted using Case 3 estimation methodology (see next page)
2. Calculations only apply to households which have supplied data for 2 months or more

## ELECTRICITY BASELINE ESTIMATION METHODOLOGY WHERE HOUSEHOLD SUPPLIES LESS THAN 12 MONTHS POWER USE DATA

Read Dry Season To Wet Season Multiplier (DTW) off chart below. The graph shows data collected from the electricity bills of 18 households gathered during Cool Communities Forums in November 2001 and February 2002.



	Data availability	12 month electricity use estimation method
Case 1	6 months or more of data fairly evenly distributed over dry and wet season	Direct extrapolation to 365 days
Case 2	Less than 6 months of data between April and September	$\left( \frac{365}{2} \times (\text{Av. kWh/day}_{\text{DRY}}) \right) + \left( \frac{365}{2} \times (\text{Av. kWh/day}_{\text{DRY}}) \times \text{DTW} \right)$ $= \frac{365}{2} \times (\text{Av. kWh/day}_{\text{DRY}}) \times (1 + \text{DTW})$
Case 3	Less than 6 months of data between October and March	$\left( \frac{365}{2} \times (\text{Av. kWh/day}_{\text{WET}}) \right) + \left( \frac{365}{2} \times (\text{Av. kWh/day}_{\text{WET}}) \times \frac{1}{\text{DTW}} \right)$ $= \frac{365}{2} \times (\text{Av. kWh/day}_{\text{WET}}) \times \left( 1 + \frac{1}{\text{DTW}} \right)$
Case 4	Some data but none of the above	Determine if majority of data for dry or wet season and use only dry or wet season data according to Case 2 or 3 above
Case 5	No power use data for the people in question in the house/unit in question	Do not mark up baseline on fridge chart or claim they are any star rating. They can still monitor emissions on chart. Estimate savings from uptake of auditors report recommendations (savings based on how they planned to operate house prior to audit) – develop questionnaire to gather this info.

## APPENDIX B

### Cool Community: Focus Groups Darwin – February 2002

#### EnergyConsult

##### *Summary and Recommendations*

The principle conclusions were:

- There was a moderate to high level of concern about environmental issues. Of particular concern were water quality, global warming (though not clearly linked to the greenhouse effect) and agricultural chemicals.
- Only a few participants mentioned the greenhouse effect and it did not appear to be very top-of-mind as far as environmental issues are concerned.
- There is a low level of understanding in the community regarding the nature and causes of the greenhouse effect and only a slightly better understanding of its effects, with a minority apparently understanding the issue.
- Most participants regarded greenhouse gases as a relatively important environmental problem. A minority said they did not know how important or were not sure whether its a normal fluctuation in the atmosphere's temperature.
- Most thought individuals, industry and governments should act to reduce GHG and believed the individual could contribute to reducing greenhouse emissions.
- Many participants appeared to have a good practical understanding of how they could conserve energy in the home and reduce waste. Reducing transport and electricity usage were understood to be priorities.
- Knowledge of what to do was not leading many people to reduce emissions. Despite being reasonably aware of ways to reduce energy usage and greenhouse emissions, only a minority of participants appeared to be taking significant actions to reduce emissions.
- Electricity expenditure was generally between \$800 to around \$1200 pa, amongst the older participants who generally had smaller households but climbed to \$2000 plus pa for most younger participants. Gas bills were around \$70 to \$200 but gas was only used for cooking. The extensive use of air conditioning and use of pools may explain the high electricity consumption in the younger households.
- The majority appeared to believe they are already taking some actions to conserve energy or reduce greenhouse, such as switching off lights, using solar hot water or buying energy efficient appliances. Unfortunately the majority of participants are not practicing many significant actions, such as using solar hot water systems and reducing their use of cars. Also a minority of householders appear to be excessive consumers of electricity.

There is scope to reduce emissions in Darwin households through encouraging:

- The installation of solar hot water systems to replace the existing electric systems.
- The installation of additional insulation in many homes that presumably need to have insulation, such as roof and wall insulation.

- The installation of low-flow showerheads.
- Encouraging the use of shading techniques to reduce the need for cooling, such as appropriate tree planting and use of verandas, pergolas and shade cloth.
- The encouragement of solar passive building design and the use of louver windows to aid in ventilation for cooling
- Better use of existing appliances and promotion of energy efficient appliances.
- More recycling and composting/ worm farms for green waste.
- Encouraging walking and riding to work, rather than driving, as a healthy and environmentally friendly activity.

There appears to be only a moderate level of awareness of the greenhouse effect. This will restrict the opportunities for concern about the effect to be used to motivate changes in GHG related behaviours without public education. There is an interest in reducing energy costs and a reasonable level of interest in environmental issues, but for many householders these interests are not being translated into actions.

Barriers to reducing greenhouse emissions in the community appear to be the:

- Moderate levels of concern about the greenhouse effect, which could undermine their motivation to reduce greenhouse emissions.
- Householders' existing habits and 'inertia', which must be overcome to change behaviour.
- There is nothing to crystallize their interest in the greenhouse effect and to focus them on taking actions to reduce emissions.
- Initial financial costs of taking some actions such as installing solar hot water or insulation and lack of awareness of existing incentives for greenhouse friendly appliances, such as solar hot water systems.

Other implications and recommendations from these results are:

- Attempting to change householder behaviour solely through appealing to the public's understanding and concern about the greenhouse effect is unlikely to be effective. Their awareness and understanding of the effect is insufficient and confused.
- The Cool Community will need to draw on several drivers in order to motivate people to change, such as appealing to financial savings (or avoiding financial loss), reducing water usage, reducing local pollution, and improved health.
- Appropriate actions will need to be encouraged with information, feedback, reinforcements and communication.