Keeping Cool

Discussion Paper for a

Queensland Medical Cooling Electricity Rebate

2009

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Executive Summary

Heat intolerance is a significant medical problem affecting people with MS. As little as 0.5C increase in core body temperature can significantly increase MS symptoms. Heat intolerance also significantly affects some people with a range of other conditions such as Parkinson's Disease, post-polio syndrome and spinal cord injury.

There are approximately 3,200 people with MS in Queensland. Approximately 52% have personal incomes of less than $26,000 per annum, and also face significant disease-related out-of-pocket costs of more than $4,000 annually.

These out-of-pocket costs, along with (a) rising electricity prices; (b) increasing economic pressures on households generally and (c) increasing number of hot days and nights due to climate change, make it more and more difficult for people with MS (and others) on low incomes to afford their medically required cooling.

People with MS do not have a choice about turning on their air conditioners.

Queensland, like most other states, provides much valued financial assistance for electricity costs to pensioners and for life support equipment. This however does not address the medical need some people on low incomes have to keep cool. WA and VIC have energy rebates schemes in place that assist those on low incomes with a medical need to keep cool pay part of the costs of running their air conditioners (and NSW is in the process of implementing one).

All of these schemes indicate that this very significant need for a small group of people can be met with minimal costs to government.

It is estimated that on average people with MS in Queensland spend between $753 and $1,004 annually operating their air conditioners in an effort to stay cool. Average QLD households in contrast, spend approximately $112-$149.

It is proposed that the Queensland Government implement a Medical Cooling Electricity Rebate to cover approximately one-third of this cost: $250-$300 annually.

At a minimum, eligibility should be the same as the current Electricity Rebate, with the additional requirement to have a doctor sign-off on the 'medical need' for cooling. Consideration should also be given to including those with low-income Healthcare Cards to ensure that all of those with low incomes and a medical need to keep cool have access.

Administratively the simplest approach would be to structure this rebate similarly to the existing Electricity Rebate – a flat annual rate. Ideally, this much needed support should be indexed annually to residential electricity tariffs so it is not eroded over time, or to CPI at the very least.

Alternatively, a percentage-based rebate could be established and should be set in such a way to ensure that an average of $250-$300 annually reaches those who are eligible.

There are approximately 3,500 people in Queensland that would be eligible in 2010-2011 (if eligibility is similar to VIC and NSW – including Healthcare Card holders). But, based on the experiences of WA and VIC it will be many years before all those eligible actually receive the concession. Uptake would be gradual, with an estimated first-year cost to the Queensland Government of $375,000-$450,000.

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Introduction

Heat intolerance is a significant medical problem affecting people with MS. As little as 0.5C increase in core body temperature creates an increase in MS symptoms for 90% of people with MS in Australia (Summers & Simmons 2009). 'Heat worsens and cooling improves negative symptoms of multiple sclerosis, sometimes dramatically so' (Baker 2002).

There are approximately 3,200 people with MS in Queensland, and approximately 52% have personal incomes of less than $26,000 per annum (Australian MS Longitudinal Study, unpublished data). Additionally, in 2005 (Access Economics) people with MS also faced significant MS related out-of-pocket costs of $3,893 on average annually, and this has increased considerably since then.

These out-of-pocket costs, combined with (a) rising electricity costs; (b) the increasing economic pressures on households generally and (c) the increasing number of hot days and nights due to climate change, mean it is more and more difficult for people with MS (and other heat intolerant conditions) on low incomes to keep cool on hot days and nights.

Running air conditioners on hot days and nights is a luxury for many people, but for people with MS it is a medical necessity.

MS is a chronic, progressive and incurable disease that attacks the central nervous system (brain and spinal cord). Most people with MS are of working age (87%) and 75% are women (Access Economics 2005).

Heat Intolerance

Increases in the core body temperature slows down already problematic nerve transmission, exacerbating MS symptoms such as blurred vision, extreme fatigue, muscle weakness, pain, tremors, memory problems, loss of balance, bladder and bowel problems, numbness and tingling, decreases in cognitive function, and in severe instances partial or complete paralysis.

In discussions with people with MS regarding what happens to them when they get hot, remarks such as the following are common:

> 'Once I get hot, I hit the wall and all I can do is go to bed, often for 18 hours at a time because I am so exhausted I can't even think or do anything else.'
>
> 'Last time it was hot my vision was blurred and I could hardly see anything. I just had to sit at home in my one room with an air conditioner and try and get cool. It took a few days for the tiredness and my eyes to improve.'
>
> 'It's really hard to look after my three kids when it's hot, I can't keep up.'

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Over 80% of Australians with MS report that they require more rest and have less energy when they get hot, and over 60% report an increase in other symptoms. Between 40-50% also report that when they get too hot they cannot undertake their usual social, domestic or work activities, and 3% report having been hospitalised because of heat (Summers & Simmons 2009).

Heat intolerance can also result in GP and other health professional visits (8%) increased use of medications (9.5%), and major impacts on quality of life. Because most people with MS are of working age, and often in the middle of raising families, these impacts can be particularly disruptive in their lives.

Approximately 32% of people with MS have mild symptoms (no or minimal functional disability such as mild walking impairment or visual disturbances), and 46% have moderate symptoms (ranging from incontinence to being unable to undertake a full day of activity). People with severe disabilities from MS (21%) are typically unable to walk unaided over any distance without assistance such as two canes or a wheelchair (Access Economics 2005). Heat intolerance is a significant issue across this spectrum of severity, and can for example, result in those with mild symptoms experiencing severe symptoms.

In short, heat intolerance is a significant and medically serious problem for people with MS. Symptoms usually return to their baseline status when the body temperature returns to normal; however in rare cases symptoms are not reversible.

Economic Impact of MS

There are significant costs associated with having MS. Access Economics (2005) found that the average annual costs to people with MS and their families in Australia is $10,500 ($3,893 out-of-pocket and $6,593 for informal care). These costs have gone up since then, and this overall cost burden is particularly difficult for the 36% of people with MS who are on a Disability or Aged Pension, receiving benefits from DVA and/or holding a Healthcare Card (Summers & Simmons 2009).

These overall economic costs make it more likely that people on low incomes with MS will struggle to cover the additional costs of keeping cool on hot days and nights. One consequence is not using air conditioners as much as they ideally should, resulting in increased health problems. This in turn can lead to increased costs through greater use of medications, visits to GPs, and hospitalisation, and has a significant impact on quality of life.

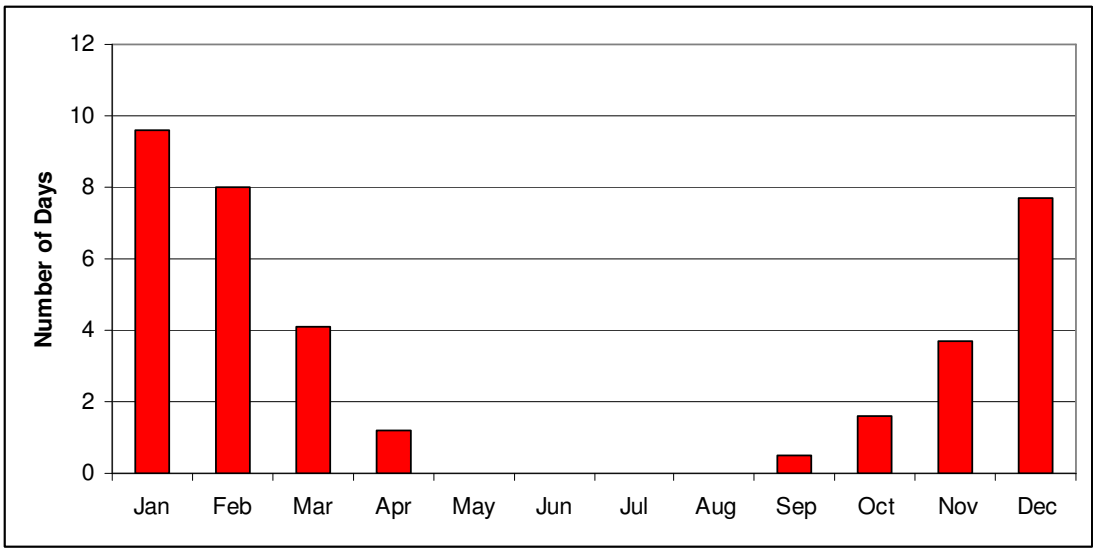
These very significant economic costs are borne by people with MS and their families across the financial spectrum. However, like other people in the community with chronic illnesses, overall people with MS have lower income levels than the general community. Although 87% of people with MS are of working age, and most people with MS are employed when first diagnosed, 80% are not employed 10 years after diagnosis (Access Economics 2005).

Climate

As the number of hot days and nights increase, the use of electricity increases for people with MS in their efforts to keep cool, pushing up costs to a group already under considerable economic pressure. Moderate to high levels of humidity, coupled with hot days and nights, also makes it much more difficult for people to keep cool.

On average there are 36 days each year that are 30C or higher in Brisbane, and 62 nights 20C or higher. The figure below describes the distribution of days 30C and over throughout the year in Brisbane. For comparison, Brisbane has 29% more days 30C and over than Sydney (Sydney averages 28 days a year 30C or higher). Additionally, when humidity is taken into account, only the Northern Territory has a higher average maximum temperature than Queensland (see Figure A3 in the Appendix).

Figure 1: Average Number of Days 30C and Over for Brisbane by Month



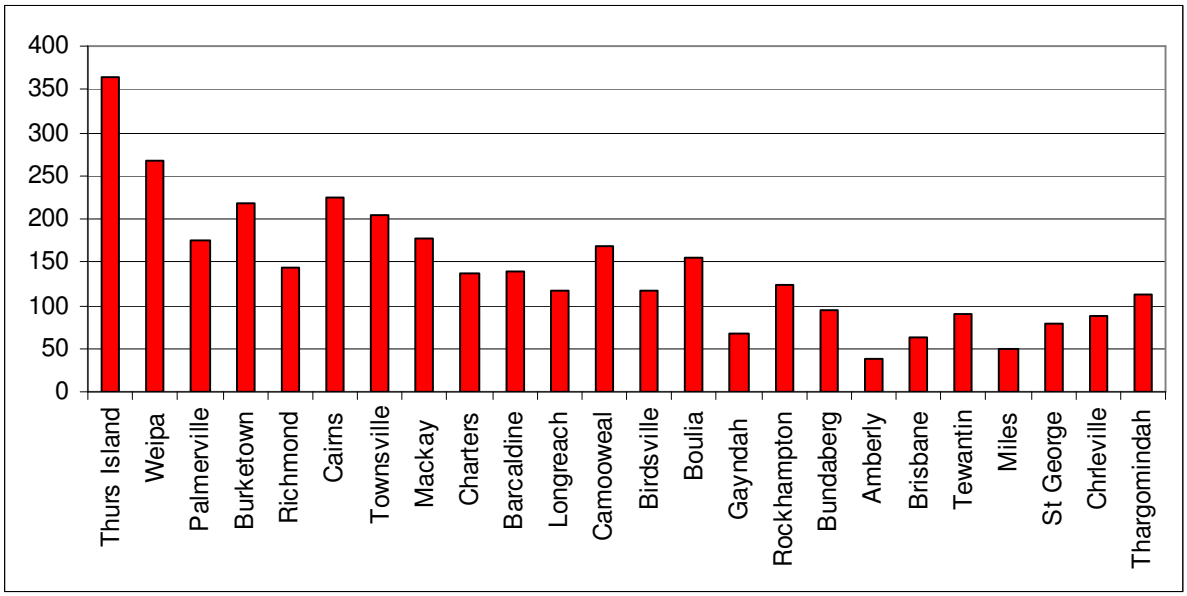
Source: Australian Bureau of Meteorology: http://www.bom.gov.au/climate/averages/; based on averaged data from 1949-2000 at Brisbane Aerodrome.

Similarly there are wide variations across QLD locations generally. Figure 2 below summarises differences in hot nights (20C or greater) between 1957 and 2007. For instance, Cairns has almost four times as many hot nights as Brisbane.

Additionally, climate change data compiled by the Australian Bureau of Meteorology demonstrates a national trend towards more hot days and nights in recent years, which is linked to global warming (see figures A1 and A2 in the Appendix).

One of the problems of only considering air temperature is that it does not take into account the impact of humidity on the body's capacity to keep cool. When reviewing information on air temperature it is important to consider the additional impact of humidity in some parts of the state during the warmer months. Figure A3 in the Appendix compares each state's average maximum 'apparent temperature' which combines humidity and air temperature into a single measure.

Figure 2: Average Number of Hot Nights Across Queensland (1957-2007)



Source: Australian Bureau of Meteorology supplied the data sets from which this data was extracted. Hot nights have a minimum temperature of 20C.

Medical Cooling Rebates in Australia

Victoria has long had a medical cooling concession in place. WA introduced one in 2007, and NSW has announced its intention to implement a medical cooling rebate on electricity bills by the end of 2009. These are described in more detail below. All of these programs demonstrate that the needs of a small group of low income people who must keep cool can be easily and affordably met by governments, and are good practice in relation to community service obligations regarding residential electricity supply.

Victoria

The Victorian Medical Cooling Concession (previously known as the MS Summer Concession) was implemented approximately 10 years ago, and has provided a discount of 17.5% on summer (Dec, Jan and Feb) electricity bills for those eligible. In July 2008, the concession was expanded to 6 months of coverage (Nov-April), and the annual budget commitment was increased from $126,000 annually to $2.4M over 5 years ($625,000 annual average).

Similar to the WA scheme, to be eligible applicants must be assessed by a medical practitioner as having a significant heat intolerance problem. They must also hold a Pensioner Concession Card, Health Care Card or Veterans' Affairs Gold Card.

In 2007-08 the Victorian concession assisted 4,313 people. It is estimated that approximately 1500 of these are people with MS. Other conditions receiving the concession include:

Lymphoedema	Cerebral Palsy
Parkinson's Disease	Scleroderma
Fibromyalgia	Motor Neurone Disease

Muscular Dystrophy
Chronic Fatigue
Systemic Lupus Erythematosus
Poliomyelitis and Post Polio Syndrome
Quadriplegia

Western Australia

The Western Australian Government implemented a Thermoregulatory Dysfunction Subsidy Scheme in January 2007. The overall projected budget is $500,000 to provide 1500 people with $424 annually (paid in monthly instalments), to assist with both cooling and heating.

The subsidy is administered by the Office of State Revenue which also administers the Life Support Equipment Energy Subsidy. To be eligible the person suffering Thermoregulatory Dysfunction must be:

- Certified by their treating physician as suffering clinical thermoregulatory dysfunction, as a result of their condition, that is of such severity that without artificial control of their immediate physical environment they would suffer serious adverse consequences and further medical complications.
- In possession of a valid means tested concession card issued by either Centrelink or the Department of Veterans' Affairs, being either a: Pensioner Concession Card; Healthcare Card; or Healthcare Interim Voucher.

NSW

In July 2009 the NSW Government proposed a range of measures to assist vulnerable consumers, including the introduction of a Medical Cooing Rebate of $130 annually. It is also proposed that this will be indexed to CPI (Dept Water & Energy 2009). Eligibility will be similar to the Victorian scheme including: Commonwealth Pensioner Concession Card, DVA Gold Card and/or Commonwealth Healthcare Card (low income category). The NSW Government has also stated that they intend to implement most of these new measures by the end of 2009.

Costs of Running Air Conditioners in Queensland for Medical Cooling

One of the key issues in relation to determining the appropriate funding level for a Queensland Medical Cooling Electricity Rebate is the annual running cost of air conditioners for people who require medical cooling. The national Keeping Cool Survey, conducted in late 2008 – early 2009 with 2,385 respondents is the best source of information on this issue for people with MS (see Summers & Simmons 2009).

Nationally the survey found that on average people with MS ran their air conditioners for approximately 1,374 hours annually, at a cost of between $488 and $650 (note that this data does not include Northern Territory). This compares with average household cooling costs nationally of between $49 and $66 (see Table 6 in Summers & Simmons

2009), indicating that on average nationally people with MS spend approximately 10 times more than average households.

For Queensland the Keeping Cool Survey found that the average hours of air conditioner use was 1,574 (the highest in Australia), with an associated average cost of between $753 and $1,004. This is also the highest in Australia, and represents a major financial burden, particularly for those on low and fixed incomes.

Other useful results from the Keeping Cool Survey of people with MS in Queensland include:

- Approximately 50% turn on their air conditioners before 30C
- 34% have air conditioners 3 or less year old (minimally 20-25% more efficient than older air conditioners)
- 34% cool only one room, 36% two rooms and 30% 4 or more rooms
- Peak months for air conditioner use are Nov-April
- Only 58% have roof insulation (compared to a national average of 70%), but this is considerably higher than average Queensland households at 41%
- In keeping with the generally high humidity levels, 97% of those with air conditioners have heat-exchange (refrigerated) air conditioners, with their associated higher operating costs than evaporative air conditioners.

Importantly, nationally the survey also found no differences in air conditioner ownership or usage patterns between those who are likely to be concession-eligible and those who are not. This is a strong indication that air conditioner use by people with MS is primarily a product of their illness, and not related to income. That is, those on low incomes find they must use their air conditioners as much as those on higher incomes (who can presumably more easily afford the costs).

A Queensland Medical Cooling Electricity Rebate

As part of its well developed community service obligations framework, Queensland already has in place an Electricity Rebate Scheme (providing $190 annually for people with Pension Concession Card, Repatriation Health Card for all conditions and Queensland Government Seniors Cards), and an Electricity Life Support Equipment Concession (for eligible applicants using oxygen concentrators and kidney dialysis machines at home). These provide valued and much needed support to particularly vulnerable consumers.

However, as indicated above, there is a small group of people in the community who need additional support to ensure that they can keep cool to maintain their health and to maximise their ability to function on hot days and nights.

The likely costs to the Queensland Government for a Medical Cooling Electricity Rebate appear to be modest in relation to cost minimisation and prevention regarding the ability of people to carry on their usual day-to-day social and domestic activities, their capacity to maintain employment and reduced demands on disability, community care and health care systems.

Eligibility

It is proposed that, at a minimum, eligibility would be the same as the current Electricity Rebate Scheme (see Appendix Figure A4). In general, current eligibility requirements include holding a Pensioner Concession Card, Repatriation Health Card for all conditions (Gold Card) or a Queensland Government Seniors Card. Consideration should also be given to extending this to include holders of low-income Healthcare Cards to help ensure that all of those on low incomes with a medical need to keep cool are eligible (this is the approach taken in both WA and VIC).

Eligibility should have the additional requirement of having a doctor sign-off on the 'medical need' for cooling. This is a requirement in both the VIC and WA models (and for the recently proposed NSW rebate), and appears to be an effective means to restricting this assistance to those who really do need it.

Payment Structures and Costs

Given the above estimates of between $753 and $1,004 for average electricity costs for people with MS in Queensland to keep cool, it is proposed that individual/families take responsibility for two-thirds of these costs, and that the Queensland Government assist with approximately one-third.

An annual Medical Cooling Rebate of $250 to $300 would provide some much needed assistance with these costs. Indexation to CPI is the most common approach to ensuring that that this much needed support is not eroded over time, but consideration should be given to indexation in relation to residential electricity prices as these are increasing at a much higher rate than CP.

Administratively the simplest way forward would be to structure this rebate similarly to the existing Electricity Rebate – a flat annual rate, paid monthly. But the feasibility of paying this rebate over the 6 warmest months (Nov-Apr) should also be considered, as this is when the assistance is most needed.

Given that Victoria has a long standing medical cooling rebate scheme (over 10 years), the number of households accessing the scheme are a good indicator of likely numbers for Queensland. Approximately 3,500 people in Queensland are likely to be eligible currently (figures are lower if low-income Healthcare Card holders are not included).

These figures are based on extrapolating from the 2007-08 VIC uptake levels of 4,313 household (and keeping in mind that in Victoria low-income Healthcare Card holders are eligible). However, it took many years for the Victorian scheme to reach capacity, and experiences in WA confirm this. The cost estimates below assume that it will take 5 years to reach uptake levels of 75%-80% of those eligible.

Assuming that the new Medical Cooling Electricity Rebate is well publicised to its target group and administratively straightforward for eligible recipients, the table below outlines possible costs to Government over the next 5 years. Uptake levels and costs would be expected to level off after this.

Table 1: Estimated Costs Over 5 Years

Year	Uptake	Rebate*	Cost ('000)
2010-11	1500	$250 to $300	$375.0 to $450.0
2011-12	2300	$257.50 to $309.00	$592.3 to $710.7
2012-13	3000	$265.23 to $318.27	$795.7 to $954.8
2013-14	3500	$273.18 to $327.82	$956.1 to $1,147.4
2014-15	3800	$281.38 to $337.65	$1,069.2 to $1,283.1

*Rebate level assumes indexation to CPI with 3% annual increase.

The other administrative option is to make the rebates a proportion of the electricity bill. This would provide some administrative challenges because existing mechanisms and frameworks are already in place for flat annual payments. However, using a proportional structure may be the most economically efficient and fairest option as it is more sensitive to local climatic variations, and it also avoids the need for annual reviews and indexation. A cap could be set to minimise excessive use. Care would need to be taken in setting any caps given the wide range of different climatic conditions across the state.

If a percentage-based option is utilised it needs to ensure that average payments are similar to those outlined above of $250-$300 initially, and would therefore have little impact on actual costs to government.

Conclusion

There is a pressing need to fill this existing gap in the Queensland energy rebate structure for people who require cooling as a result of conditions such as MS, spinal cord injury and Parkinson's Disease. Evidence from similar schemes in other states demonstrates that this can be done effectively and fairly without excessive costs to government.

While most of us have a choice about whether or not we turn on the air conditioner, this group does not.

This is a real opportunity for the Queensland Government to provide much needed and well targeted assistance to a small group of people who are finding it increasingly difficult to maintain their everyday domestic activities on hot days and nights.

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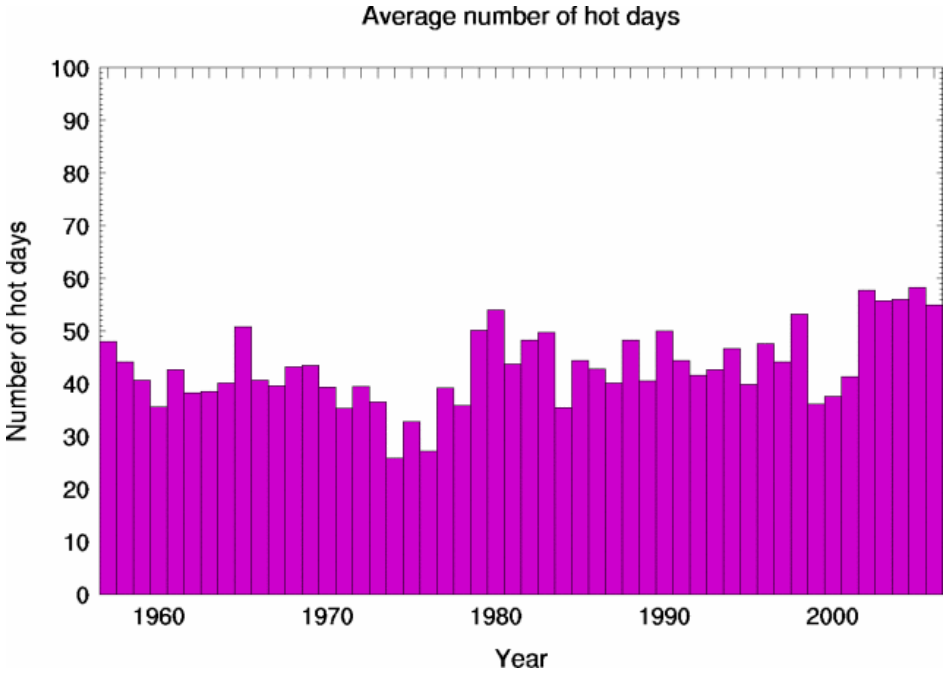
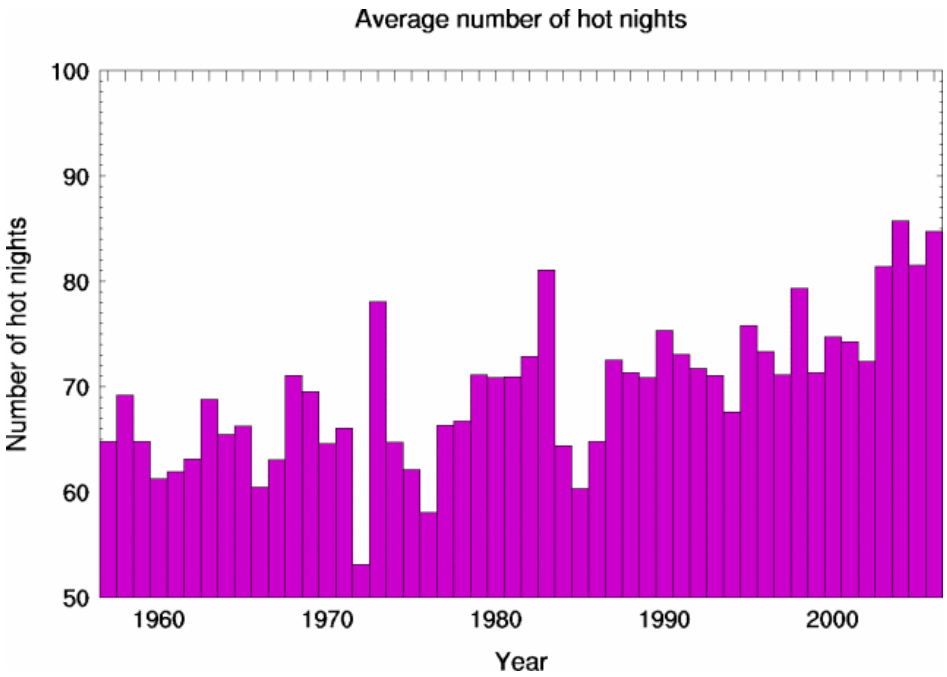
Appendix

Figure A1: Average Number of Hot Days in Australia



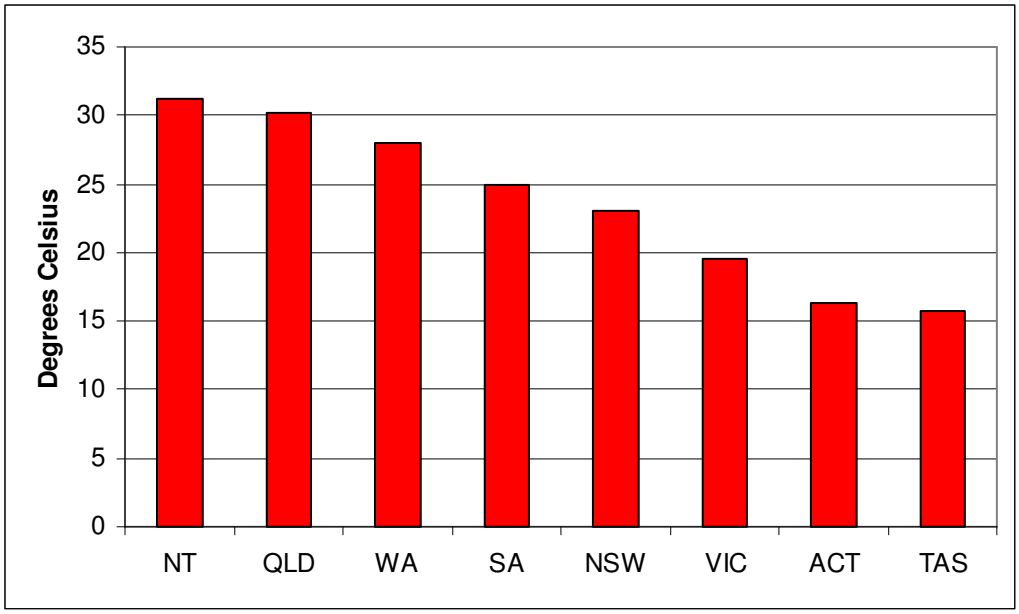
Note: Hot days are those days greater than 35C. Source: http://www.bom.gov.au/cgi-bin/silo/reg/cli_chg/extreme_timeseries.cgi

Figure A2: Average Number of Hot Nights in Australia



Note: Hot nights are those greater than 20C. Source: http://www.bom.gov.au/cgi-bin/silo/reg/cli_chg/extreme_timeseries.cgi

Figure A3: Average Maximum Apparent Temperature by State 1977-2007



Source: Data supplied by Bureau of Meteorology, Climate Division, Melbourne. Note that apparent temperature is a combined measure that takes into account the impact of humidity.

Figure A4: Electricity Rebate Eligibility Requirements for Queensland

These eligibility requirements have been copied and pasted directly from the electricity rebate application form which can be found on the internet at: http://www.communities.qld.gov.au/community/concessions/documents/word/electricity-rebate-application.doc

Subject to the conditions listed below, persons who hold one of the following cards may apply for the electricity rebate.

➲ **Pensioner Concession Card**

You **MUST** hold a current and valid **Pensioner Concession Card**, issued by either Centrelink or the Department of Veterans' Affairs, to be eligible for the electricity rebate.

➲ **Repatriation Health Card For All Conditions**

*You **MUST** hold a current and valid **Repatriation Health Card For All Conditions*** (Gold Card) and be in receipt of one of the following payments to be eligible for the electricity rebate.

☑ **War Widow**
(including **Widowed Mother** [AMS] **Pension**)

☑ **Special Rate T.P.I.**
(Including **Blinded Disability**) **Pension**

➲ **Queensland Government Seniors Card**

You **MUST** hold a current and valid Queensland Government **Seniors Card** to be eligible for the electricity rebate.

Eligibility Criteria

Eligible Pensioners and Seniors who claim the rebate shall have the rebate granted, provided that Condition (a) and the relevant sections of Condition (b) are met:

(a) The applicant must be the registered consumer of an Electricity Retail Corporation at the premises for which the rebate is claimed and the premises is his/her principal place of residence, and the only residence within or outside Queensland which the rebate is claimed, **and**

(b) The applicant must live alone or share the premises in respect of which the rebate is sought with:
(one or more of the following sub-conditions may apply and each relevant item should be addressed)

(I) their spouse, or;

(II) other persons who hold a Queensland Government Seniors Card or Pensioner Concession Card, or;

(III) other persons wholly dependant on the applicant, or;

(IV) other persons who receive an income support payment from Centrelink, Family Assistance Office or Department of Veterans' Affairs who do not pay rent, or

(V) other persons who live with the applicant to provide care and assistance, and who do not pay rent, and

declares that no other person(s) excepting casual visitors share the residence with the applicant.