

Queensland Parliamentary Inquiry into Energy Efficiency

QCOSS Response

August 2008



About QCOSS Inc

Queensland Council of Social Service (QCOSS) is the peak body for over 600 welfare and community sector organisations in Queensland. For over 50 years QCOSS has worked to promote social justice and exists to provide a voice for Queenslanders affected by poverty an inequality. We act as a State-wide Council that leads on issues of significance to the social, community and health sectors. We work for a Fair Queensland and develop and advocate socially, economically and environmentally responsible public policy and action by community, government and business.

The Department of Mines and Energy (DME) and the Department of Justice and Attorney-General (DJAG) has funded QCOSS for an energy consumer advocacy project in Queensland. The objective of the QCOSS Energy Consumer Advocacy Project is to examine and provide input into Queensland Government energy policies and where relevant the relationship to national energy policy, with a particular focus on the needs of low income and vulnerable households.

Introduction

Energy efficiency is generally recognised as a key mechanism to reduce greenhouse gas emissions, slow the growth in energy demand and reduce the need for investment in new energy infrastructure, as well as reduce energy use and concomitant energy related costs for consumers. In particular, energy efficiency programs have been identified as central to reducing fuel poverty and ameliorating the impact of higher energy prices resulting from climate change and climate change related policies^{1,2}.

The efficacy and extent to which increased energy efficiency in the residential sector is achievable has been clearly identified^{3, 4, 5}. Despite consuming less energy in total than the industrial and commercial sectors, the Australian residential sector still has the potential to significantly reduce energy and water use, resulting in attendant reduction in greenhouse gas emissions⁶. As emissions trading and peak demand makes energy more expensive, energy savings measures such as energy efficiency will become more attractive.

Nonetheless, there are many barriers to improving energy efficiency performance, particularly for low-income and vulnerable households. These barriers include inadequate consumer information and education, inconsistent incentives between parties incurring the capital costs of energy efficiency measures and those receiving the savings benefit (e.g. between landlords and tenants), and high initial and hidden costs in accessing energy efficiency opportunities'.

In this submission we focus specifically on the barriers for low income and other vulnerable households to become more energy efficient, and the responses that governments can make to address these barriers.

¹ KPMG, Brotherhood of St Laurence and Ecos Corporation. 2008. A national energy efficiency program to assist low income households.

ACOSS. 2008. Submission to Carbon Pollution Reduction Scheme Green Paper.

³ Oppenheim, J. & MacGregor, T. (2000) Low Income Consumer Utility Issues: A National Perspective: Excerpts Regarding Energy Efficiency. National Consumer Law Centre: Boston

 ⁴ Government of Victoria. (2006). Energy Efficiency for Victoria. Action Plan.
⁵ George Wilkenfeld and Associates Pty Ltd. (2004). NFEE – Energy Efficiency Improvement Potential Case Studies, Residential Water Heating. A Report for the Sustainable Energy Authority Victoria.

Government of Victoria. Energy Efficiency for Victoria: Action Plan'. 2006.

⁷ Energy Efficiency and Greenhouse Working Group. (2003). National Framework for Energy Efficiency Issues and Challenges. Commonwealth of Australia: Canberra.

We argue that although these households often have very low levels of energy consumption, there is nonetheless potential for energy efficiency measures to assist some households to make savings on their consumption and therefore their energy bill. Arguably the driver here is not just the value of the reduction in carbon emissions which may be smaller than that possible in other segments of the residential market, but ensuring there is equity in climate change policy.

We discuss the two major factors influencing whether a household is able to implement energy efficiency strategies: household finances and housing tenure. We argue that both the upfront costs and the "split incentive" are two barriers to energy efficiency for low-income households that must be addressed through government energy policy and accompanying programs.

Finally we comment on the limitations of the existing suite of programs to encourage energy efficiency in Queensland and the targeted responses that are likely to be needed to reach low-income households, specifically energy audit and retrofit programs. We also consider the role of appropriately designed energy targets and certificate schemes as well as the potential for energy charges and tariff design to send price signals to incentivise consumers to become more energy efficient.

Why target low-income households for energy efficiency?

It is important to recognise that although low-income households spend a much higher proportion of their weekly budget on utilities such as electricity and gas than do wealthy households, they also have a significantly lower energy consumption profile. Recent data from the Centre for Sustainable Energy in the UK demonstrates this clearly.⁸ Figure one below details the electricity consumption level of households across income quintiles - the larger the bubble the larger the number of households represented. The data shows that the vast majority of households in the lowest income deciles have the lowest level of consumption (940kw per annum). The exact opposite is true in the highest income decile where the majority of households consume the highest level of energy (6, 200kw per annum).



Figure 1: Electricity Consumption across Income Groups

Source: Centre for Sustainable Energy (2008) Assessing the social impacts of a supplier obligation: report to DEFRA

⁸ Centre for Sustainable Energy (2008) Assessing the social impacts of a supplier obligation: report to DEFRA

Australian studies also confirm this pattern. For example, a survey undertaken in Victoria by the Department of Human Services found that concession card households used 15% less electricity than non-concession households. While usage increased with household size, concession cardholders consistently consumed less than non-concession cardholders across all household sizes.⁹

Given this, the question could easily be asked: why focus on low-income households for energy efficiency as for the most part they have a much smaller carbon footprint than do other households?

QCOSS would argue that although the energy savings that could be made by these households may be small and the impact on greenhouse gas emissions negligible, an equitable response to climate change demands that low-income households are afforded opportunities to participate in and benefit from energy efficiency measures.

It is well understood that climate change itself, and efforts to mitigate the impact of climate change will disproportionately impact on low-income households. Low-income and other disadvantaged households are much more vulnerable to and less able to adapt to the likely impacts of altered climatic conditions, and will also be subject to increased costs as a result of climate change mitigation measures such as the introduction of an emissions trading scheme. Increased costs will flow not only from higher energy prices, but also from increases in the costs of other goods as the effects of higher energy prices are factored into the underlying costs of production and delivery.

At the same time, low-income households are less able to take advantage of existing energy efficiency measures. Low income people are more likely to be reliant on outdated appliances that increase energy consumption and to be living in poor quality/poorly designed housing without insulation resulting in greater consumption of energy and therefore higher ongoing household costs. Many disadvantaged households in Queensland are reliant on inadequate housing in the private rental market.

Households that will be particularly affected include those:

- consuming relatively high levels of energy despite earning very low-incomes (see the boxed group in Figure 1);
- Iocated in geographic areas not served by natural gas;
- Iocated in remote and Indigenous communities that have either very poor infrastructure or limited choice of energy source;
- > with old or inefficient appliances that consume energy inefficiently;
- living in sub-standard houses;
- with health and disability issues; and
- that consist of very large families.

The 10% of Queenslanders who are living below the poverty line (defined as 50% of the median disposable household income) have already been subject to a 32% increase in the price of energy in the past three years, placing additional strain on household budgets. Increasing electricity prices contribute to many more consumers being unable to pay their bills on time, risking late penalties and/or disconnection. Higher electricity prices also increase levels of consumer debt, at a time when debt is at record high levels. QCOSS is also concerned that many low-income households are actually under-consuming putting their health and wellbeing at risk. Energy efficiency measures that are appropriately targeted can play a role in rectifying these

⁹ Department of Human Services, Responses to the Review of Effectiveness of Retail Competition and the Consumer Safety net for Electricity and Gas: Issues Paper, 2003, p4.

equity issues for low-income households by reducing costs and reducing exposure to the price impacts of carbon trading.

Barriers to improved energy efficiency in the residential sector

There is already a considerable body of research outlining market failures and other barriers that make it difficult for consumers to realise energy saving opportunities. In 2005 the Productivity Commission undertook an inquiry into the private cost effectiveness of improving energy efficiency and devoted a chapter to barriers and impediments. They classed barriers into three categories: market failures (including lack of information, information asymmetry, and split incentives), organisational failures (including cultural and behavioural norms), and other barriers including access to and costs of capital, risk and uncertainty and low energy costs as a component of total costs). More recently a Victorian discussion paper which lead to the introduction of the Victorian Energy Efficiency Target also identified similar barriers including the tendency of consumers to "discount" upfront costs rather than value the savings that energy efficiency improvements could make over the longer term. They also found that the cost of "search" time involved in understanding and assessing the impact of particular purchase decisions and the quality and availability of information available can also present barriers.

In general, there appears to be broad consensus concerning a core set of barriers to energy efficiency in the residential sector. The UK energy policy maker OFGEM summarises these as being:

- > Financial barriers particularly around upfront costs
- > Hidden costs such as redecorating post installation, search costs
- Lack of consumer information
- Lack of consumer agency or empowerment to install measures and change behaviour; and
- Poorly aligned incentives particularly in the rental accommodation sector where the tenant pays energy bills.¹⁰

Of these agreed barriers we propose to focus on only two in this submission: upfront costs and the problem of split incentives.

Upfront Costs

For low income households the first and foremost barrier to energy efficiency relates to lack of financial resources. Queensland households in the lowest income quintile, for example, are more than twice as likely as the general population to be unable to raise \$2000 within a week for something important (24.9% compared to 11.6% of all households¹¹. The upfront costs involved in purchasing energy-efficient appliances or supplementary goods like insulation are prohibitive for many households, even when improvements would have a short payback period. Major appliances such as refrigerators or hot water systems are not replaced until failure and in such circumstances replacing the appliance within the available budget is likely to be prioritised over energy efficiency.

Split Incentives

The second major barrier to energy efficiency for low-income households arises because they are much more likely than other households to be renters in the public

¹⁰ OFGEM, Can energy charges encourage energy efficiency? June 2009.

¹¹ ABS, General Social Survey, Queensland, 2006

or private rental market. Rental arrangements give rise to "split incentives", whereby the owner of the house is responsible for capital improvements and major appliances (eg. hot water system, oven and cook-top) that could increase energy efficiency, yet does not benefit from a reduced energy bill while tenants, who benefit from reduced energy bills, have no incentive to invest in capital improvements or major appliances that offer energy efficiency improvements.

It is easy to understand the disincentive from the tenant's point of view considering the average length of occupancy in a rental property in QLD last year was about 12 months¹² and the average payback period for most commercially available technologies is 4 years. In a recent ABS survey on Energy Use and Conservation, amongst households without insulation (some 30% in Queensland) the most common reason cited for not installing insulation was "not being the home owner or responsible for the dwelling".

From a landlord's point of view, there is little incentive to purchase energy efficient products for the home as the benefits of lower operating costs accrue to tenants. The primary incentive of a landlord is to make a good return on their investment by maximising the rental price, maintaining occupancy, and minimising expenditure. Unless such purchases assist in this aim, there is little likelihood that upgrades and improvements will occur.

While noting the significance barrier posed by split incentives in their 2005 report into the cost effectiveness of energy efficiency, the Productivity Commission concluded that was still possible for both parties to negotiate agreement to the extent that energy costs are important. They were also reluctant to consider government intervention to address this and other barriers (save for information failures) due to the potential distortions that could occur in the energy market.

Consumer groups responded to this conclusion by pointing to the power differential in the tenant/landlord relationship and short lease periods that makes negotiation between the parties unlikely.¹³ The imbalance in the relative bargaining power of the parties is particularly acerbated when rental properties are in high demand, with low vacancy rates and high rental costs. Landlords have no need to improve the energy efficiency of their property to encourage renters to stay and renters do not have the luxury of taking the thermal efficiency of a dwelling into consideration when choosing where to live.

While many states, including Queensland have introduced energy efficiency standards for new housing, there are no requirements for older housing and there is nothing to compel landlords to retrofit rental properties to reduce costs for their tenants. Even if they were to do so, there is nothing to stop them passing on the costs through rent increases resulting in higher levels of financial stress for tenants.

As a result of the split incentives barrier renters as a group can be doubly disadvantaged – they are people that are least able to afford energy efficiency measures and they are more likely to live in the least energy efficient dwellings.

While there are similar issues for public housing tenants, there are also unique challenges for this group of renters. Those tenants living in older housing stock that pre-date modern building codes and have old hot water systems and lack ceiling insulation will be particularly at risk of higher energy bills. QCOSS has received

¹² this figure is derived from RTA data on the average length of time that they held rental bonds last year.

¹³ Energy Consumer's Council, *Comments on the PC inquiry draft report*, CUAC paper

representation from public housing tenant groups about the poor efficiency of some dwellings, and particularly the bulk hot water systems that are used in many unit complexes. Electric storage hot water systems are known to be the least efficient and most expensive to run. In addition, because of either the size or the electrical wiring into individual dwellings, tenants are not able to access off peak tariffs for these systems (which would be a normal cost saving measure for owners of such units).

While in some cases public housing tenants have greater security of tenure, they still experience the same disincentives as other renters in terms of energy efficiency (ie. up front costs, the need to seek permission from the landlord, no incentive in terms of improvements to the value of the property). In addition a number of existing federal rebates and programs do not apply to dwellings that are state owned, and this has also impacted on the ability of public housing tenants to access state programs where they rely in part on a commonwealth subsidy (ie. The Queensland Solar Hot Water Program).

Effectiveness of current approaches in Queensland

In Australia and in Queensland there are numerous programs that target energy efficiency measures in private households but very few which specifically target in low-income households. In Queensland rebates for the purchase of energy efficient appliances and goods, and more recently home audits, have been the favoured approach by government to encourage efficiency in the residential sector. There has also been some efforts to remove inefficient goods from the market, for example by banning electric hot water systems, and by introducing mandatory star ratings for air conditions.

Such measures can be extremely effective and QCOSS welcomes the efforts of the Queensland government for their initiatives to date. However these options have been designed with no or minimal focus on equity outcomes, and as a result do not overcome some of the barriers for low-income groups. While rebates will provide some incentive for some low-income households, the incentives will be stronger for transportable appliances rather than for fixed or non-transportable structural changes. For others, the upfront capital costs no matter how small will simply be too great. Rebates may also reduce the disincentive for owner/landlords to implement energy efficiency changes, but are more likely to be effective when connected to regulatory obligations. Without strategies that clearly target specific groups ie. owner/landlords, low income renters, low income owner occupiers, it is likely that only better financially resourced owner occupiers will be incentivised to adopt energy efficiency.

QCOSS welcomes programs such as the Climate Smart Home Smart Audit program. Cost savings from the replacement of inefficient light bulbs and from water efficient fittings (where houses have electric hot water systems) can be considerable for lowincome households. The provision of a remote monitor to measure electricity usage also overcomes one of the barriers to energy efficiency, ie. lack of real time information or feedback on energy usage. For these reasons QCOSS would like to see the program made more accessible to low income households by waiving the \$50 charge in areas where local councils do not rebate the cost. However, to the extent that additional energy efficiency improvements are suggested (and it could be argued that this program does not provide a comprehensive audit service), lowincome households would be unable to act on recommendations. We believe there could be some gains by further development and targeting of the program to provide more specific energy efficiency information that can be practically used by low income households and renters. Further training of auditors would be required, but an excellent model and training resources exist due to the work of Kildonan Uniting Care. Kildonen Uniting Care provide an audit service for Origin and AGL Energy in Victoria and have provided a model and training for use by other organization in other states.¹⁴ We would also argue that the audit process needs to link to targeted retro-fit and appliance replacement programs. We make further comment on the design and value of energy audits targeted to low income households below.

QCOSS also welcomes the Queensland Government's Solar Hot Water Program and in particular the higher subsidy for low-income households. Although this increased subsidy substantially reduces the pay back time on a solar hot water system for those eligible, these upfront costs plus council fees added to the time and hassle in seeking permission from a landlord may still be too great a disincentive. We note that this program is not open to public housing tenants as they are not eligible for the commonwealth subsidy on which it builds. We fear that very few low-income households will access this scheme and would suggest that numbers be carefully monitored. If uptake of the low-income subsidy is slow, a better approach may be to quarantine some of the funds specifically for the low-income target group and provide a more targeted program approach. This may result in a greater cost per unit for lowincome households, but a greater take-up of the program by low-income households overall.

Removing Barriers to Energy Efficiency – low income households

Energy Audits and Retrofit Programs

No cost comprehensive energy audits delivered face-to-face should form the basis of any energy efficiency program targeted to low- income households. In order to maximise the benefit to vulnerable households energy audits must be combined with retrofit and appliance replacement schemes that must go further than the installation of compact florescent tube lighting and low-flow shower heads and tap aerators. The installation of a broader range of technologies such as insulation, window coverings (both internal and external), sealing around windows and doors, hot water systems and energy efficient appliances must be part of the suite of options available to assist low income and disadvantaged households. The specifics of offerings to individual households must be targeted to address the needs and circumstances of those households.

Capital costs for appliance replacement and upgrading of housing must be provided as part of any energy efficiency programme for low income and disadvantaged households. The way in which these may be delivered to eligible customers may vary but could include a mix of buy-back and trade-in schemes, no-interest loans as well as grants that do not require repayment, although the latter has greater benefit for those with limited capacity to repay debt. Appliance replacement may be a priority in the short term for people residing in residential tenancies given the inherent difficulties resulting from split incentives.

Any energy efficiency measures adopted by the Government should be informed by existing knowledge on effectiveness, particularly with low income and disadvantaged households. There are already examples of effective energy efficiency and retro-fit programs with low income and disadvantaged households in some jurisdictions in Australia, and many more internationally. QCOSS supports commencement, as

¹⁴Lifeline has recently commenced audits for hardship customers of Origin Energy using the Kildonen model.

soon as practically possible, of multifaceted, intensive assistance with energy efficiency, based on the learnings from existing successful programs. It is important that any future energy efficiency programs coordinate and build on existing successful schemes where these exist.

Examples of effective energy efficiency and retro-fitting programs with low income and disadvantaged households are detailed below:

Victorian Energy and Water Taskforce:

This state funded program provides an audit and retrofit service which focuses on public housing in Neighbourhood renewal areas. Since commencing in 2003 the program has retrofitted over 4700 households. The retrofit is usually of low cost items and the average expenditure per home is \$700. By 2011 the taskforce will retrofit a further 8000 homes.

US federally funded Weatherization Program

This long running federally funded program is designed to decrease the energy cost burden on low-income households. "Weatherisation crews" determine the most cost effective measures for each home which are implemented free of charge. The average expenditure per house is \$2, 826. Evaluations suggest that for every dollar spent \$2.60 is returned in energy and non-energy benefits.

UK "Warm Front"

The UK Warm Front program targets households experiencing fuel poverty. Households receive a comprehensive energy. Between 2000- 2006 the program serviced approximately 1.3 million households.

ACT Water and Energy Savings Trial (WEST)

The WEST program was a predominantly government-funded trial program aimed at decreasing energy and water use in low-income households and raising awareness regarding that use. The program assisted predominately public housing, however, this may be more indicative of the particular residential sector in the ACT as opposed to being a focus of the program. Having provided an average of approximately \$1,200 per household, over 48% of houses reported very significant savings in the cost of energy consumption. The evaluation also determined that this had resulted in a significant number of participants no longer requiring special assistance with their utility bills¹⁶.

> Energy Efficiency Program for Low Income Households (EEPLIH)

The EEPLIH trial operated in partnership with non-government, community welfare organisations, who administered the program and provided an interface between program providers and the Department of Transport, Energy and Infrastructure which managed the program funding. Six different community organisations provided the program throughout the Adelaide metropolitan area, providing retrofitting services, energy and water audits and appliance replacement (particularly refrigerators). Over the 18-month course of the pilot, the program assisted over 10,900 households. The

¹⁵cited in Brotherhood of St Laurence, Climate change: addressing the needs of low-income households in the private ¹⁶ Sutherland, P. (2008). Water and Energy Savings in the Territory program Evaluation Report. ACT Essential

Services Consumer Council. Canberra.

evaluation of the project found that the pilot had assisted consumers in reducing the rate of default on energy bills. This had the effect of both reducing the rate of disconnection as well as reducing the rate at which consumers presented at welfare organisations for assistance. The evaluation also identified the significant linkages and use of existing community welfare organisations for service provision and referral to be a great strength for the program, increasing its effectiveness¹⁷.

Victorian Phoenix Fridge Program

The Phoenix Fridge Program is a cooperative programme developed in partnership between the Moreland Energy Foundation, the Brotherhood of St Laurence, St Vincent de Paul, the electrical Trades Union and RMIT TAFE. The project aims to increase the energy efficiency of second-hand fridges distributed to low income households. In this way greenhouse gas emissions are reduced, more economical operating costs for low income households are achieved and employment and economic opportunities are created. Results from the pilot project found that the energy efficiency of most old fridges could be improved by up to 25% by simple lowcost measures, improvements in energy efficiency of greater than 50% could be attained by slightly more expensive measures, such as compressor replacement, there is a large unfilled demand for refurbished fridges in low-income households and the removal of unrepairable fridges from the market could reduce emissions of greenhouse gases significantly (because of both high electricity use and CFC emissions), while saving low-income households the high running costs of these inefficient appliances¹⁸.

Tailored Information for "hard to reach" households

Lack of awareness of the potential for energy efficiency measures to reduce energy bills and poor availability of information are fundamental barriers to the uptake of energy efficiency opportunities for households. The provision of information by governments economises on the transaction costs associated with the pursuit of energy efficiency options. In order to maximise efficacy, the nature of energy efficiency information and education will need to be tailored to the specific need of different populations. 'Hard to reach' and 'hard to teach' will benefit from the in-depth energy efficiency audit we have recommended and education programs on top of more general community awareness campaigns. Research has suggested that the act of carrying-out an audit in and of itself may be enough to have some impact on the amount of energy and water used in a household¹⁹.

Follow-up with participating households in the period after initial service delivery is also be important in achieving sustained changes to behaviour resulting from a comprehensive energy and water audit. This follow-up may also have the effect of reinforcing messages delivered in the course of service delivery. One study suggested that the provision of education in conjunction with other programmatic energy efficiency measures had a synergistic effect, increasing the efficacy of both^{20,}

Incentivise Landlords to retrofit

 ¹⁷ Spoehr, J., Davidson, K. and Wilson, L. (2006) 'An Evaluation of the Energy Efficiency Program for Low Income Households', Prepared for Energy Division, SA Department of Transport and Infrastructure.
¹⁸ Moreland Energy Foundation. (2004). The Phoenix Fridge Project: report of Stage 1 Trial Project. Executive

Summary. Melbourne. ¹⁹ Oppenheim, J. & MacGregor, T. (2000) Low Income Consumer Utility Issues: A National Perspective: Excerpts

Regarding Energy Efficiency. National Consumer Law Centre: Boston ²⁰ Ibid.

²¹ Brown, M et. Al. (1993) Keys to Success: 10 Cases of Effective Weatherization Programs,

Oak Ridge National Laboratory, p. xxi

As noted earlier rebate schemes reduce the disincentive for owners/landlords to make changes, but a rebate scheme connected to regulatory obligations is likely to be more effective in bringing about change in the rental market. Use of additional tax incentives and interest free loans may also be appropriate strategies, but it will be important to incorporate obligations on landlords around maintaining rent charges.

Energy star rating for rental housing

In the longer term however the introduction of mandated standards for energy efficiency of private rental properties and public housing is essential. Under such a scheme properties would be evaluated and given a star rating. Part of the rationale for this proposal is to provide an incentive for landlords to invest in energy efficiency improvements. The energy star system would provide a means of comparison for renters. Low star rated properties could also be prioritised for attention as part of energy audit and retrofit programs targeted to low-income households. This has occurred in the UK as part of the Warm Front program. The new Nationwide House Energy Rating Scheme (NatHERS) may provide a basis for such a program.

Public Housing

Governments have an opportunity to act directly and relatively quickly in the area of social housing and provision of funding to improve the energy efficiency of public housing should be a priority. Although QCOSS does not have information about the overall scope of retrofitting that might need to occur, we would suggest that greater investment and urgency is needed to ensure that at minimum, all dwellings are insulated and inefficient electric hot water systems are replaced. Our understanding is that hot water systems are currently replaced only on failure.

The non-government sector

Organisations in the non-government social welfare sector are well placed to provide energy efficiency programmes to low-income and disadvantaged households given their extensive experience in engaging with this target group and encouraging their participation in programs. Many organisations may not currently have the necessary capacity to undertake work in the area of energy efficiency. Support for the nongovernment sector will be necessary to ensure an adequate level of knowledge and skills to deliver programmes. The non-government sector is also likely to be adversely affected by increasing energy costs and consideration must be given to providing support for energy efficiency measures that will assist the community sector.

Broader Policy Approaches to Encouraging Energy Efficiency

Energy efficiency targets

Mandatory energy efficiency targets, delivered through market based certificate schemes, can play an important part in Queensland's demand side energy policy. Energy efficiency target schemes are in operation in a number of countries with promising early experiences emerging and several Australian jurisdictions have introduced, or are in the process of introducing so-called 'white certificate' schemes. Such schemes, if well designed, can be an effective way to provide incentives for energy efficient projects and activities. Both the South Australian and Victorian

schemes have commenced this year, so it is too early to assess how effectively they are operating. The SA Residential Energy Efficiency Scheme (REES) requires energy retailers to offer incentives to customers to take energy saving measures, for example replacing light bulbs and showerheads, draught proofing, and upgrading appliances to more energy efficient ones.

As low-income households, along with some other classes of consumers such those living in rural and remote locations, Indigenous communities and culturally and linguistically diverse households, are often 'hard to reach' or 'hard to service' it is possible that energy efficiency activities within a market based scheme may not be delivered to these groups at the same level as more easily accessible consumer groups. To counter this possibility it is important that priority groups are identified, along with separate targets for energy efficiency activities and savings for these groups. The new South Australian scheme requires that at least 1/3 of energy efficiency targets are met in low income households and that retailers conduct energy audits in homes of low income customers.

A number of international schemes also require that a certain proportion of the energy efficiency target by delivering measures to low income households. The higher this proportion the greater the benefits to low-income households. In Britain at least 50% of energy efficiency measures must take place in low-income households.

Any energy efficiency target scheme is likely to include a range of eligible measures and activities. However abatement achieved by one measure is not always as valuable as abatement achieved by another measure, particularly with regard to improving household resilience to rising energy prices. Energy use may be characterised as both discretionary and non-discretionary and energy efficiency target schemes that prioritise non-discretionary services such as refrigeration, water heating and space cooling/heating have the greatest potential to improve household comfort and energy affordability and mitigate the effect of emissions pricing on households' ability to access essential services.

Introduction of a white certificate trading system may result in retail prices of electricity and gas increasing as suppliers face the additional cost of the scheme. Retailers would pass the transaction costs of complying with the scheme (search for information, cost of certificates, energy efficiency improvements, administrative procedures, verification and monitoring) on to customers. Clearly this would augment any cost pressures that disadvantaged consumers may face. Some international schemes require that scheme costs cannot be passed onto low-income consumers. Adoption of a lifeline tariff approach to energy pricing would allow minimum levels of energy provision to be quarantined from the pass through of costs. (see below)

Improve minimum energy performance standards

QCOSS welcomed the Queensland government's move to ban air conditioners with less than a four star rating from the market from July this year. Inefficient appliances increase energy use, demand for energy infrastructure and greenhouse gas emissions. Energy efficient appliances can play a significant role in reducing energy consumption and energy bills, while maintaining and even improving standards of living. Minimum energy performance standards and energy performance labelling allow households to avoid purchasing energy inefficient products. Currently minimum energy performance standards and energy efficiency labelling requirements apply to a limited range of appliances. There are no labelling requirements for second-hand appliances.

Pricing signals and tariff design

The question of whether "price signals" from increasing energy costs and tariff redesign can encourage people to use energy more wisely is about to be hotly debated in Queensland. In late June the Queensland government asked the Queensland Competition Authority to review existing electricity tariff structures to determine whether they send appropriate price signals to consumers to encourage energy conservation and efficiency, and if not, to consider alternatives that might. The QCA is required to report to the Minister for Natural Resources, Mines and Energy in November.

There is considerable empirical evidence to suggest that demand for electricity is inelastic both in the short and the long run, meaning that the change in the quantity of electricity demanded does not alter proportionately to the percentage change in price. For example, research by Langmore and Dufty into household demand responses found that a 30-40% price increase was required to effect a 4% consumption reduction if relying on price alone.²² Such evidence suggests that the variables such as dwelling size and thermal efficiency and household characteristics such as income, size, appliance holdings and lifestyle, are more determinate of demand than is price.

The reason that households do not respond to pricing levels and different pricing structures varies. While some households fail to respond because energy costs are small relative to the total household budgets or because of cost and effort, when low-income households don't respond it is often because they cannot. In fact they are likely to be considerably more price sensitive than other households, but with less discretionary usage and therefore less ability to reduce usage or undertake measures to use energy more efficiently for the reasons outlined earlier in this paper. For this reason QCOSS does not support use of price as an instrument to deliver greenhouse gas emission reductions.

The question of whether energy charges can encourage energy efficiency was recently the subject of a discussion paper by the UK Office of Gas and Electricity Markets.²³ Their conclusion was that price and tariffs are not an effective mechanism to address many of the barriers to energy efficiency, but that they may play a supporting role. They note that direct measures, including financial incentives, are needed to overcome high up font costs, lack of information and advice and split incentives in the rental market. They also warn that some pricing structures can lead to negative welfare effects as there are significant differences across income groups in price sensitivity and the affordability of energy efficiency measures.

QCOSS will argue for the introduction of a "life line tariff" or rising block tariff in our response to the review of tariff structures by the QCA. A rising block tariff works similarly to water charges in Queensland whereby the consumers are charged a lower rate for the first "block" of consumption that is set at a level that reflects nondiscretionary energy usage. Charges per kw hour rise as consumption increases, thus encouraging reductions in non-discretionary usage. A rising block tariff is will benefit the majority of consumers who on the whole use less energy, however such an approach needs to be combined with additional measures to assist those low income households who have high consumption to reduce their consumption, or where this is not possible for reasons of household size or medical necessity, to provide financial assistance. (ie. The approx. 18% of households circled in Figure 1). An inclining block tariff structure will also provide some incentive for higher income/ higher consumption households to reduce energy usage (within the limits of the demand inelastacy of price outlined above).

²² Langmore M & Dufty G, *Domestic electricity Demand Elasticities, issues for the Victorian Energy Market,* June 2004, page 11

²³ Office of Gas and Energy Markets, Can Energy Charges Encourage Energy Efficiency, July 2009

Conclusion

QCOSS believes that government can make effective interventions to promote energy efficiency in the residential sector and to remove the barriers that currently exist. However if this is not done in combination with broader policy focus on equity, low income households will miss out and be further disadvantaged. We believe it would be useful to have an overarching energy policy for Queensland that articulates this equity aim explicity. The recently released ClimateSmart 2050 policy has missed this opportunity, and correspondingly, does not focus on measures that will ensure low income households can participate in climate change mitigation measures or measures to reduce the impacts of climate change on this group. Explict consumer and equity in Queensland government policy would provide a more balanced and coherent framework for future decisions around a range of energy related matters including such things as pricing regulation, tariff design methodology, market measures such as renewable energy targets and certificate schemes, as well as energy efficiency measures more generally.