

**FINAL**

# **Managing Rising Energy Costs for Seniors in the ACT**

***Issues and Options related to the future of  
ACT Energy and Utility Concessions***

*Prepared by Tony Beck, M.Ec, PhD – July 2015*

# Executive Summary

## Need for energy support in the ACT

The risk to health and wellbeing from energy hardship is well documented and is particularly relevant in the ACT where extremes of temperature are common. In recent years both electricity and gas prices have increased substantially in the ACT and further increases seem likely. As a result the risk of energy hardship for seniors in the ACT remains a significant and possibly growing concern. Consequently the role of energy support programs and concessions is of particular interest to COTA ACT.

Concern about the high price of energy and energy hardship for seniors was confirmed in the recent national COTA Energy Survey of members. Nationally 12 per cent of the respondents indicated difficulty paying an energy bill. Nevertheless bills are generally paid on time and there is a relatively low take-up of hardship programs. In effect seniors are likely to reduce their energy use, potentially to an extent that is detrimental to their health and wellbeing, rather than fail to pay their bills.

More than any other jurisdiction, ACT respondents are reliant on both electricity and gas supplies with each costing respondents around \$1000 per annum. The resulting household energy costs are the highest of any jurisdiction and about 30 per cent higher than the national average.

Respondents were shown to be proactive in attempting to manage their energy use and costs and were generally interested in taking up new technologies and practices to limit their energy costs. A significant number, however, were constrained by the up-front costs involved. Respondents also showed a high level of awareness of and concern about climate change and its causes.

Overall the COTA survey suggest a community facing high energy costs and already engaged in proactive energy management but with the potential to take this engagement further given the right conditions. For many seniors economic incentives to provide better energy management would be reinforced by achieving improved environmental outcomes.

## Current Energy and Utility concessions

To be eligible for the current ACT energy and utility concessions applicants must be the primary holder of a Centrelink Pensioner Concession Card, a Centrelink Low Income Health Care Card, or a Veteran's Affairs Pensioner Concession Card.

Currently the combined value of the two concessions is \$426.46 per eligible household and in 2013-14 assistance was provided to 28,530 ACT households. When utility prices rise it is usual for the rebates to increase proportionately. Consequently, significant increases in the prices for both electricity and gas, together with the increase in the number of eligible households, accounts for an average five year annual growth rate of 18.1 percent in the budgetary cost of these concessions.

COTA ACT recognises that budgetary constraints mean that the concessions program may need to be more tightly targeted or may benefit from recasting to make support delivery more efficient and effective - for instance, assistance to seniors to modify their homes to reduce energy bills is an

alternative way to ensure seniors are able to afford a comfortable living environment in terms of temperature control.

This submission provides initial consideration of some options and opportunities to do this. However, COTA ACT's view it that no decision should be made to cut or modify concessions without a comprehensive analysis of the existing suite of programs including a review of the financial capacity to pay and the cost-of-living pressures of the recipients and the impact of possible changes.

### **Improving cost effectiveness**

While there is the prospect of continuing high and increasing energy prices, changing energy technologies also have the potential to moderate the energy costs borne by the consumer. Roof-top PV solar costs, for example, have been falling rapidly in recent years making it an increasingly viable option for reducing electricity costs (and emissions) where physical and financial conditions are favourable. Improvements in the efficiency of gas use have also been occurring.

The cost effectiveness of support for both recipients and the ACT government could be improved by using concessions to foster access to more efficient technologies and practices. At the same time environmental outcomes could also be improved, something that is a priority for the ACT government and the ACT community.

To this end COTA ACT puts forward a 'Cash-Out' option. In summary, the energy and utility concessions could be retained but with the added option for eligible recipients of 'cashing out' the annual concession to provide a one-off lump sum to, at least partly, finance the installation of more energy efficient technology such as a rooftop solar system or more efficient heating/cooling. An appropriate cash-out rate would need to be determined but could be equivalent of say five years of the current concession, approximately \$2130.

Indicative analysis in this paper shows that providing the option for current concession recipients to 'cash-out' their concessions to subsidise the installation of renewable or other efficient technology has the potential to benefit i) the recipient, in terms of a more substantial annual cost reduction, ii) the ACT government, in terms of reduced outlays in the medium term, and iii) the environment, in terms of reduced emissions.

Some conditions would attach to achieving this 'win, win, win' outcome, including the householder being in a position to install suitable technology, but COTA ACT believes that the option would be feasible for a significant number of residents. For others, such those in rented or high-rise accommodation where options to adopt more cost effective energy solutions is limited, annual concessions should continue.

### **Financing options**

For some householders, the residual up-front costs may be the main impediment to the adoption of otherwise cost effective technology. This submission outlines some options for ameliorating these costs. Financing up-front costs, for example, could be of interest to 'impact investors' who are seeking a positive social and/or environmental benefit, as well as a financial return, from their investments.

There could also be a role for Power Purchase Agreements (PPA) with energy utilities which are available in some parts of Australia but not yet in the ACT. Under a PPA the utility installs roof-top solar at no cost to the householder who then pays a reduced rate for the electricity generated. Using the concession cash-out option to reduce the utility's cost of installation should have the potential to further reduce the tariff paid by the householder.

If such financial arrangements are deemed worthwhile, the ACT government could play a valuable role in facilitating the introduction of suitable plans to the ACT targeting low income and senior residents.

## **Conclusions**

With both electricity and gas prices increasing in real terms, energy disadvantage remains an important issue for aging and low income residents of the ACT. The support provided by the ACT government in the form of energy and utility concessions is a valuable contribution to the health and wellbeing of many residents and the case for an ongoing energy support program is strong. Nevertheless, COTA ACT recognises that alternative formulations and options within the support program could deliver more cost effective benefits for residents, the ACT government and the environment. The prospects for such an outcome have been enhanced by technological advances in the fields of renewable technology, energy conversion and energy management practices.

In our submission COTA ACT explores an approach that would allow some of the funding currently committed to the annual concession payments to be used to encourage householders to adopt energy cost saving technologies and practices that would lead to a permanent long-term reduction in energy costs (and emissions) and thereby reduce the need for ongoing concession payments.

COTA ACT believes that these options are worth considering in more detail as part of a holistic approach to the review of concessions. COTA ACT also believes that the review, and any subsequent introduction of alternative support arrangements, should be pursued on a collaborative basis with the stakeholders involved.

-----

# Managing Rising Energy Costs for Seniors in the ACT

## Background and issues related to ACT concessions

Energy and Utility concessions are significant components of the current suite of ACT Government concessions aimed at assisting individuals, families, community groups and organisations to meet cost of living pressures. COTA recognises that growing expenditure on the concessions program and the challenging fiscal environment has prompted the ACT Government to instigate a review of the concessions program and 'seek feedback from the community on what improvements could be made to optimise the benefits from the Concessions Program.'

COTA recognises that budgetary constraints mean that the concessions program may need to be more tightly targeted to those most in need or may benefit from recasting to make support delivery more efficient and effective. This paper provides some initial consideration of some options and opportunities to do this. However, COTA ACT's view it that no decision should be made to cut or modify concessions without a comprehensive analysis of the existing suite of programs. In particular an evidence-based review of the financial capacity to pay and the cost-of-living pressures of the recipients should be conducted and the impact of possible changes determined.<sup>1</sup>

## Current Energy and Utility concessions

To be eligible for the current energy and utility concessions applicants must be the primary holder of one of the following concession cards: Centrelink Pensioner Concession Card (PCC), Centrelink Low Income Health Care Card (HCC), or a Veteran's Affairs Pensioner Concession Card.

Currently the combined value of the two concessions is \$426.46 per eligible household comprising \$338.21 for the Energy Concession and \$88.25 for the Utility Concession. When utility prices rise it is usual for the rebates to increase proportionately. This, together with the increase in the number of eligible households accounts for a significant increase in the cost of these combined concessions over the last five years.

The concessions make a valuable contribution to reducing the cost of energy for recipients. For average and small residential customers in the ACT whose annual electricity bills are estimated by the ICRC at \$1816 and \$1032 respectively,<sup>2</sup> the current \$426.26 concession represents a 23 per cent and a 41 per cent cost reduction respectively. However, it needs to be recognised that for most ACT residents their total energy costs would also include a significant gas bill.

---

<sup>1</sup> COTA ACT (2015), Comments on the Review of the ACT's Concessions Program, Submitted April 2015

<sup>2</sup> ACT Independent Competition and Regulatory Commission (ICRC) (2014), Standing offer prices for the supply of electricity to small customers – Final Report, Canberra, June 2014

## **Role of concessions**

The quality of life and health dangers of energy hardship are well documented nationally and internationally<sup>3</sup> and are particularly relevant in the ACT where extremes of temperature are common. COTA ACT research indicates that among the rebates available to seniors in the ACT, energy rebates are considered by many to be the most critical.

## **COTA member perspective**

According to the recent national COTA Energy Survey of members<sup>4</sup> based on 1371 respondents, the high price of energy and energy hardship are seen to be significant issues. Nationally 12 per cent of the respondents indicated difficulty paying an energy bill. Nevertheless bills are generally paid on time and there is a relatively low take-up of hardship programs. In effect seniors are likely to reduce their energy use, potentially to an extent that is detrimental to their health and wellbeing, rather than fail to pay their bills.

Respondents were shown to be proactive in attempting to manage their energy use and costs with one in five having switched either their electricity or gas retailer (or both) in the last two years. Over 38 per cent have solar PV, 2.6 times the Australian average indicating a willingness and capacity to invest in energy solutions.

Respondents reported some knowledge of other new technologies, but the survey suggested that there was still opportunity to educate the COTA demographic, and seniors more generally, on new tools and technologies and emerging trends in energy management such as smart meters and more efficient appliances.

Respondents also showed a high level of awareness of and concern about climate change and its causes, with only 10 per cent of the sample considering that climate change is caused by natural causes. Nearly 80 per cent of respondents either strongly believed or thought it most likely that climate change was a major problem for the planet and over 90 per cent either strongly believed or thought it most likely that saving energy would reduce greenhouse gas emissions.

## **ACT specific observations**

In the national COTA Energy Survey ACT respondents totalled 177 or around 13 per cent of the total sample. Results indicated that, more than any other jurisdiction, ACT respondents are reliant on both electricity and gas supplies with each costing respondents around \$1000 per annum. The relatively high gas use would appear to be the result of the need for effective heating in the ACT with over 60 per cent of respondents having ducted gas heating installed. The resulting household energy costs are the highest of any jurisdiction and about 30 per cent higher than the national average.

Respondents were asked about their use of energy schemes such as home energy audits, home insulation rebates and solar panel rebates. While uptake of these schemes has been reasonable among respondents there would appear to be potential for encouraging more use of such schemes

---

<sup>3</sup> See COTA NSW (2011), Energy Security: Protecting Older People from Energy Hardship,

<sup>4</sup> COTA (2015), COTA Energy Survey 2014

to reduce energy costs. When questioned as to why they had not taken part in such schemes two common ACT responses were “*Wanted to but schemes were stopped before I could*” and “*Can’t afford it – need to spend money up front to get money back later*”.

Overall the ACT specific responses in the COTA survey suggest a community already engaged in proactive energy management but with the potential to take this engagement further given the right conditions. For many the economic incentives to improve energy management would be reinforced by achieving improved environmental outcomes.

## **ACT budget impact of energy/utility concessions**

The rising real cost of energy and the growing number of eligible recipients in an aging population is reflected in the growth of ACT government funding needed to support the current energy and utility concessions. In 2013-14 assistance was provided to 28,530 households who received an average \$424 rebate for the energy/utility concession, at a cost of \$12.1 million.<sup>5</sup> Of all the concessions provided by the ACT Government the energy and utility concession are the most significant in terms of total cost and probably also in terms of the number of households benefiting.<sup>6</sup> They are also the concessions that have grown most rapidly in terms of total cost growing from \$5.3 million in 2008-09 to \$12.1 in 2013-14, an average five year annual growth of 18.1 percent. The average annual increase in the number of people accessing the concession has been 5.7 per cent per annum since 2009-10.<sup>7</sup>

COTA ACT suggests that a review of the ACT concessions program should look at older Canberra’s current and future support needs in a holistic way. Concessions may not be the only or the most efficient and effective way of addressing the goal of adequately meeting these support needs – for instance, assistance to seniors to modify their homes to reduce energy bills is an alternative way to ensure seniors are able to afford a comfortable living environment in terms of temperature control.<sup>8</sup>

With this holistic approach in mind COTA ACT has considered potential options for the future of energy support programs in the ACT and these are discussed later in this paper.

## **Energy market situation and outlook**

In real terms, both electricity and gas prices have increased substantially in the ACT in recent years. This is well illustrated in recent data published in the federal government’s 2015 Energy White Paper.<sup>9</sup>

---

<sup>5</sup> ACT Government (2015), Discussion Paper on the Expenditure Review of the ACT Concessions Program.

<sup>6</sup> For the vehicle registration concession 36,417 people received a concession. However for many households there could be more than one person receiving the concession, and overall the total cost is substantially lower at \$3.5 million.

<sup>7</sup> ACT Government (2015), Discussion Paper on the Expenditure Review of the ACT Concessions Program

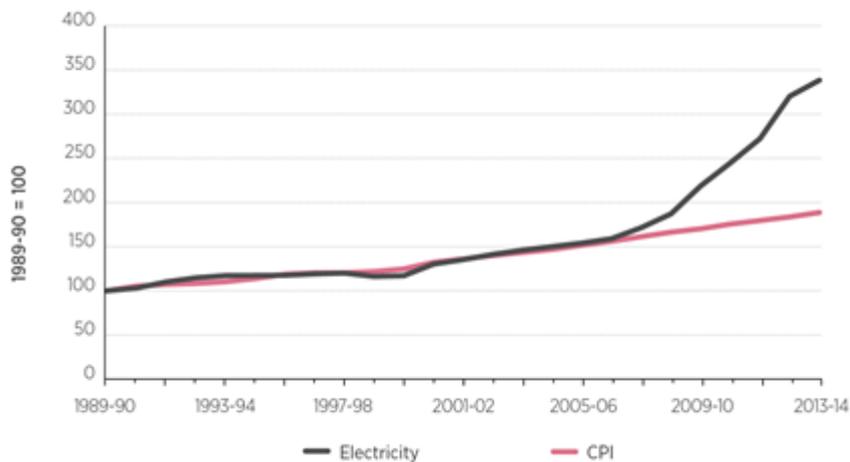
<sup>8</sup> COTA ACT (2015), Comments on the Review of the ACT’s Concession Program, April 2015

<sup>9</sup> Australian Government (2015), Energy White Paper, Dept. of Industry and Science, Canberra April 2015

## Electricity trends

The following diagram shows the national retail electricity price index since 1989-90 relative to the CPI. Recent price rises are well above CPI and are unprecedented in recent decades.

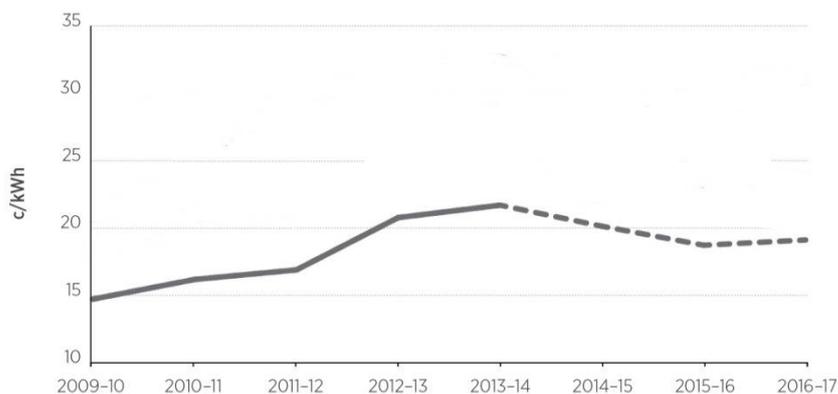
**Figure 1:** National retail electricity price index, 1989-90 to 2013-14



Source: ABS 2014

Looking forward, as illustrated in Figure 2 below, the ACT electricity price will trend down slightly in 2014-15 and 2015-16 due largely to the removal of the carbon tax, but resume an upward trend in 2016-17.

**Figure 2:** Trends in retail electricity prices, 2008-09 to 2013-14 and forecasts to 2016-17



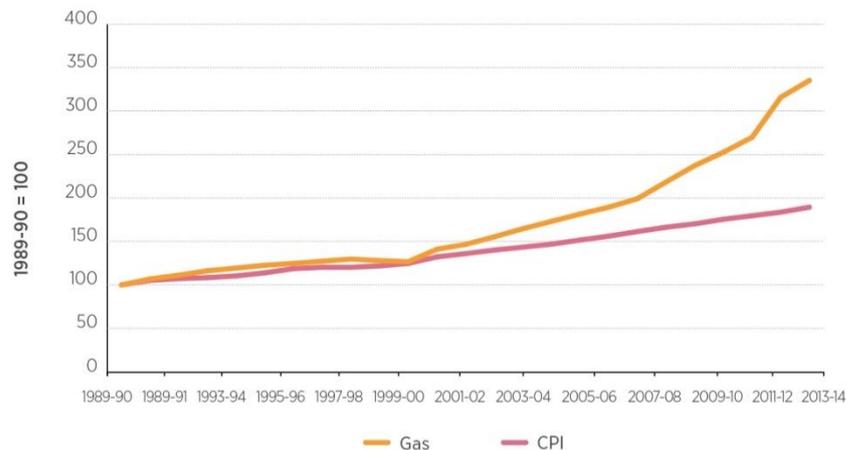
Source: AEMC

Note: Prices are expressed as nominal cents per kilowatt hour (c/kWh) values and are exclusive of GST.

## Gas trends

Over the past 10 years, the retail price of gas for households has also risen substantially increasing by 8 per cent a year. This is significantly faster than the rate of inflation as demonstrated in the figure below.

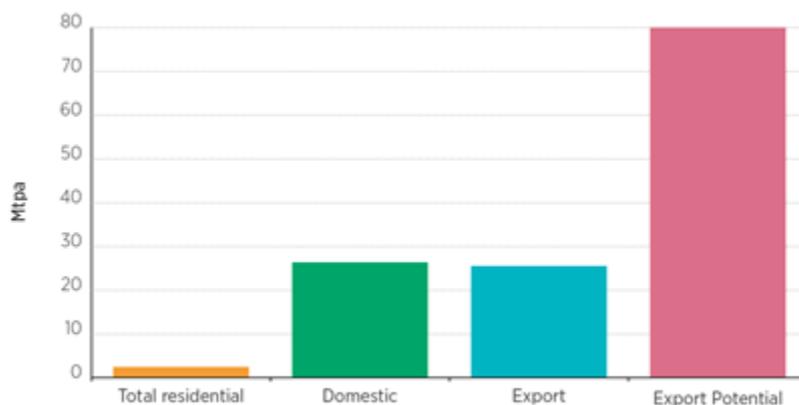
**Figure 3:** Retail household gas price index, 1989-90 to 2013-14



Source: ABS 2014

This price trend is likely to continue as the east coast gas market is increasingly dominated by the export market. The figure below shows the recent weighting of the export market relative to the domestic market as well as the substantial export potential that is likely to be realised in the next few years.

**Figure 4:** Gas use and export 2012-13 and export potential in 2018



Source: BREE 2014c

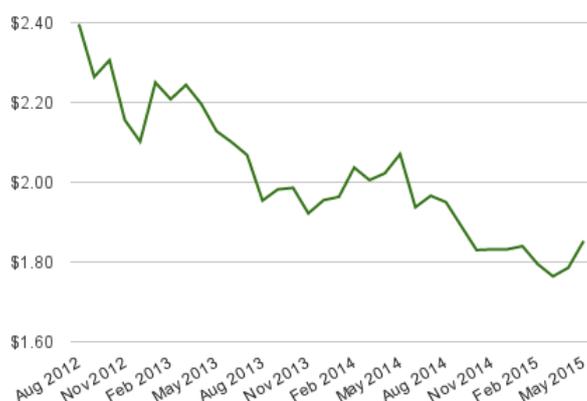
Consequently, continued upward movement of prices to international parity seems inevitable and the rate of increase could accelerate in the medium term if oil/gas prices recover.

## The technology context

While there is the prospect of continuing high and increasing energy prices, changing energy technologies also have the potential to moderate the energy costs borne by the consumer. Two such technologies that are relevant in the ACT, roof-top photo-voltaic (PV) solar and efficient gas heaters, are considered here but there is a range of others.<sup>10</sup>

Roof-top PV solar costs have been falling rapidly in recent years making it an increasingly viable option for reducing electricity costs (and emissions) where physical and financial conditions are favourable. The chart below from Solar Choice<sup>11</sup> shows solar PV system prices since August 2012.

**Figure 5:** Solar PV system costs - indexed \$/W



Source: Solar Choice

Similarly, gas heating is popular and effective in the ACT and new technologies available in recent years have improved the efficiency of typical systems. For example, efficient (six star) gas furnaces used for ducted gas heating now have improved heat exchangers, better heat modulation and more flexible zoning relative to the three star furnaces typical in the past (and still operating in many homes). Savings of around \$460 per annum and emission reductions of 1.6 T CO<sub>2</sub> have been claimed following the installation of a six star heater.<sup>12</sup>

## Potential for cost abatement

Energy costs will continue to be a significant burden on low income ACT residents many of whom are seniors. The case for support for low income seniors in meeting their energy cost is strong but the cost effectiveness of support for both recipients and the ACT government could be improved by using concessions to foster access to more efficient technologies and practices. At the same time

<sup>10</sup> Other technologies such as solar energy storage systems, heat pump heating/cooling systems, smart meters, and improved insulation may also be relevant in some situations.

<sup>11</sup> Solar Choice (2015), solarchoice.com.au (accessed 10 Jun 2015), compiled using data from Solar Choice's installer network database. The most recent figures for May 2015 indicate a cost of \$4826 (\$2.36/W) for a 2kW system and \$7407 (\$2.32 /W) for a 4kW system.

<sup>12</sup> Seeley International (2015), Braemar ducted heating brochure, for 'super six' vs 3 star heaters.

environmental outcomes could also be improved, something that is a priority for the ACT government and the ACT community.

### **A 'Cash-Out' option**

In summary, the energy and utility concessions could be retained but with the added option for eligible recipients of 'cashing out' the annual concession to provide a one-off lump sum to, at least partly, finance the installation of more energy efficient technology such as a rooftop solar system or more efficient heating/cooling. An appropriate cash-out rate would need to be determined but could be equivalent of say five years of the current concession, approximately \$2130.

For the eligible concession recipient who takes up this option and installs efficient energy technology it could substantially reduce their energy costs. For the ACT Government it would represent a substantial saving relative to the ongoing cost of the annual concessions, and environmentally it would reduce energy related emissions. The benefits of such a scheme are illustrated below using an indicative solar case study.

### **Solar case study**

This case study involves an average<sup>13</sup> ACT householder who is eligible for the current energy and utility concessions totalling \$426.26 per annum. Under the option proposed, the householder has the option of cashing out this concession for \$2130 (approximately equivalent to 5 years of the concession) to contribute to the cost of a roof-top solar system.

It is assumed that the householder has roof space suitable for a medium size solar system of 3kW capacity<sup>14</sup> and this could be installed at a total cost of \$6130.<sup>15</sup> By cashing out their energy and utility concessions for the lump sum of \$2130 the cost of the solar system is reduced to \$4000.

In line with current rates, ACT electricity and solar feed-in tariffs are assumed to be \$0.18/kWh and \$0.075/kWh respectively.<sup>16</sup>

### **Financial benefit to householder**

Using these assumptions a spreadsheet model was used to estimate the annual savings, payback period, internal rate of return (IRR) and net present value (NPV) that would result from this investment. These were found to be as follows:

- Annual savings: \$634 (a reduction of 40% in electricity costs)

---

<sup>13</sup> For purposes of assessing electricity price impacts the ACT ICRC defines an average ACT residential customer as one who has an annual usage of 8000 kWh – see ICRC (2014) *Standing Offer Electricity Prices from 1 July 2014 – Final report*

<sup>14</sup> Technical assumptions related to solar generation include average daily sun hours: 4.8; self consumption ratio: 0.8 (i.e. 80% of electricity generated is consumed directly by the household); solar system efficiency: 0.8.

<sup>15</sup> Solar Choice (2015), *May 2015 Average Solar PV System Prices*, <http://www.solarchoice.net.au/blog/residential-solar-pv-system-prices-may-2015> (accessed 11 June 2015); data points are the average of average \$/W across a range of system sizes.

<sup>16</sup> Australian Energy Regulator (2015), *Based on representative ACT Tariff Rates – ActewAGL ACT Energy Rewards 5% Home Saver plan (ex carbon price) as specified on* <https://www.energymadeeasy.gov.au/compare-offers/details/1434005076> (accessed 11 June 2015)

- Payback period: 6 years
- IRR : 16%
- Net Present Value: \$4810

For the householder this represents an attractive investment resulting in annual saving on electricity costs of over \$600 per year, as opposed to the current concession value of \$424. It is also attractive because the benefit to the householder is directly related to the value of the electricity offset by solar production and consumption. As the cost of grid provided electricity increases so does the solar offset value.

### ***Environmental benefits***

COTA recognises that the ACT government has ambitious greenhouse gas emissions reduction targets reflecting a vision that by 2060 the ACT will be a sustainable and carbon neutral city that is adapting to a changing climate.<sup>17</sup>

For an average ACT household using 8000 kWh of grid-sourced electricity per year, greenhouse gas emissions are approximately 6.88 tonnes of CO<sub>2</sub>e pa.<sup>18</sup> The installation of a 3kW solar system as described above would generate around 3680 kWh of electricity per annum reducing emissions by around 3.16 tonnes of CO<sub>2</sub>e pa or about 40 per cent.

### ***ACT Government perspective***

Partially recasting the energy and utilities concessions program to allow low income senior ACT residents to install appropriate energy/emission efficient systems could be both cost effective and cost saving. For the ACT government there would be a trade-off in such a scheme between providing a one-off upfront support payment of say five times the concession value (\$2130 in the example above), against the alternative of paying the annual concession for say 15 or 20 years.

The relative value of these alternatives can be calculated using discounted cash flow analysis. Assuming a discount rate of five percent the net present value of 15 or 20 annual payments of \$424 is \$4401 and \$5284 respectively, substantially more than the alternative up-front payment of \$2130.

This would suggest that such a scheme should be attractive to the ACT government from both a financial and environmental perspective.

### **Additional financing options**

While the concession cash-out option could be expected to allow a significant number of eligible residents to benefit from more cost effective energy solutions, for others the residual up-front capital cost (\$4000 in the solar casestudy above) could remain a barrier. This barrier could be

---

<sup>17</sup> ACT Climate Policy, <http://www.environment.act.gov.au/cc> Accessed 18 June 2015

<sup>18</sup> Australian Government (2015), National Greenhouse Accounts Factors – Dec 2014 Update, Department of Environment, Canberra. p.20 Emissions factor for consumption of purchased electricity – NSW & ACT: 0.86 kg CO<sub>2</sub>e/kWh

addressed through various funding arrangements some of which would benefit from ACT government involvement and facilitation.

## **Impact Investing**

There is a growing interest among investors in community projects that have welfare, environmental and/or other social benefits as well as financial returns - so called 'impact investing'. According to Impact Investing Australia<sup>19</sup>, a not-for-profit organisation established to develop the market for impact investing in Australia, impact investments are *'investments that set out to achieve positive social and environmental impact, alongside a financial return, and measure the achievement of both.'*

In Australia and internationally, impact investments are funding new initiatives in a wide range of areas including aged care, community development, health, housing, renewable energy, and sustainable agriculture. The focus on achieving a financial return distinguishes impact investing from grant funding while the focus on achieving positive social outcomes distinguishes impact investing from conventional financial markets.

More investigation is needed into the potential support that impact investors could give to a seniors/low income energy program, but with scope for generating social, environmental and financial benefits it would appear to incorporate elements attractive to such investors.

## **Power Purchase Agreements**

A new form of financing solar systems for householders based on a Power Purchase Agreement (PPA) has recently been introduced by some utilities in some regions of Australia. These include AGL's *Smart Solar* and Origin's *Solar as a Service* plans. In summary these plans involve the utility installing the system at no upfront cost to the householder and the householder then buying the generated electricity from the system at a specified rate that is lower than the regular grid based rate.

Contracts of various lengths are available, such as 7 or 12 years, during which the system is maintained by the utility and the rate only changes in line with the CPI. At the end of the contract the PPA can be renewed or the householder can take ownership of the system and access other plans.

While there are no up-front costs for the householder, the attractiveness of these plans to customers will vary depending on the rates charged and other conditions. For example, suitable roof space is required and the property must be owned by the customer. Rates will vary depending on the length of the contract, prevailing local electricity rates, and local conditions.

Such plans are being rolled out progressively by electricity retailers but are not currently available in the ACT. More work is needed to understand the details of these PPA-based plans and how they could be tailored to benefit low income ACT residents and seniors seeking to reduce the financial burden of electricity costs. For example, PPA's could be adapted to take advantage of the concession

---

<sup>19</sup> Impact Investing Australia (2015), <http://impactinvestingaustralia.com/resources/impact-investing-2/>  
Accessed 18 June 2015

cash-out option. The up-front cash payment could be paid to the utility to subsidise the installation costs of the solar system and the tariff charged to the householder for electricity reduced accordingly.

If such an arrangement was deemed worthwhile, the ACT government could play a valuable role in facilitating the introduction of suitable plans to the ACT targeting low income and senior residents.

## **Conclusions**

With both electricity and gas prices increasing in real terms, energy disadvantage remains an important issue for the aging and low income residents of the ACT. The support provided by the ACT government in the form of energy and utility concessions is a valuable contribution to the health and wellbeing of many residents and the case for an ongoing energy support program is strong.

Nevertheless, COTA ACT recognises that alternative formulations and options within the support program could deliver more cost effective benefits for residents, the ACT government and the environment. The prospects for such an outcome have been enhanced by technological advances in the fields of renewable technology, energy conversion and energy management practices.

In this paper COTA ACT explores an approach that would allow some of the funding currently committed to the annual concession payments to be used to encourage householders to adopt energy cost saving technologies and practices that would lead to a permanent long-term reduction in energy costs and thereby reduce the need for ongoing concession payments.

Analysis in this paper shows that providing the option for current concession recipients to 'cash-out' their concession and use the resulting lump-sum to subsidise the installation of renewable or other efficient technology has the potential to benefit i) the recipient, in terms of a more substantial annual cost reduction, ii) the ACT government, in terms of reduced outlays in the medium term, and iii) the environment, in terms of reduced greenhouse gas emissions.

Some conditions would attach to achieving this 'win, win, win' outcome, including the householder being in a position to install suitable technology, but COTA ACT believes that the option would be feasible for a significant number of residents. For others, such as those in rented or high-rise accommodation where options to adopt more cost effective energy solutions is limited, annual concessions should continue.

For some householders, the residual up-front costs may be the main impediment to the adoption of otherwise cost effective technology. This paper also explores some options for ameliorating these costs. Financing up-front costs could be of interest to 'impact investors' who are seeking a positive social and/or environmental benefit, as well as a financial return, from their investments.

There could also be a role for Power Purchase Agreements with energy utilities whereby the utility installs roof-top solar at no cost to the householder who then pays a reduced rate for the electricity generated.

COTA ACT believes that these options are worth considering in more detail as part of a holistic approach to the review of concessions. COTA ACT also believes that the review, and any subsequent

introduction of alternative support arrangements, should be pursued on a collaborative basis with the stakeholders involved.

-----