CONSERVATION COUNCIL
ACT REGION

20-02-09

Dr Hanna Jaireth
Secretary
Standing Committee on Climate Change, Environment and Water
ACT Legislative Assembly
GPO Box 1020
CANBERRA ACT 2601

Submission on the Inquiry into ACT Greenhouse Gas Reduction Targets

Dear Ms Jaireth,

The Conservation Council has been protecting the environmental interests of Canberra and South East Region since 1979. We are the peak community environment organisation and our mission is to achieve the highest quality environment for the Canberra region. We represent the interests of community conservation organisations in the region as well as the broader environmental interests of all Canberrans.

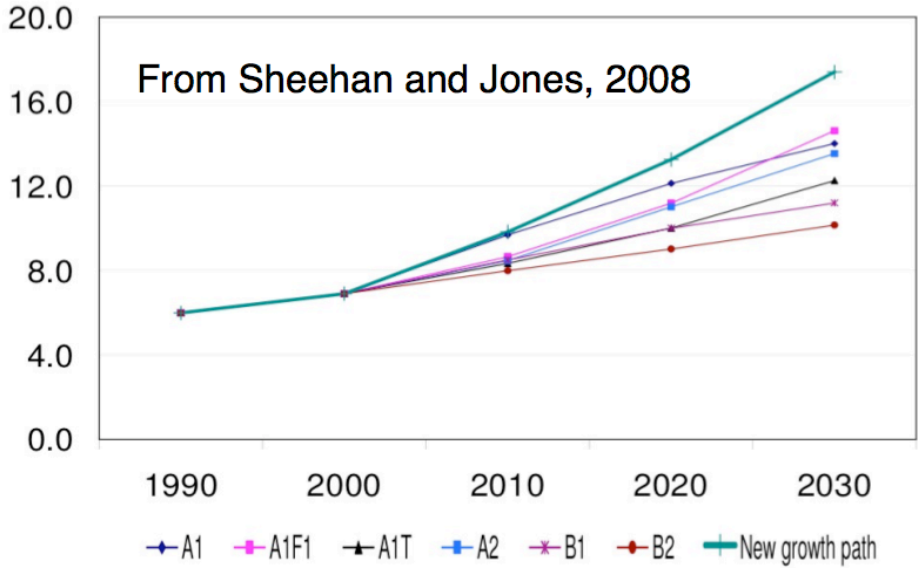
In 1999 the Conservation Council supported the ACT Government's target of stabilisation at 1990 levels by 2008, and an emissions reduction target of 20% by 2018. In 2007, following the latest science of the IPCC, we joined with Conservation Councils nationally, and other leading environmental organizations in calling for a 30% emissions reduction, based on 1990 levels, by 2020.

The science is now telling us that anthropogenic climate change is progressing much faster than we ever expected, impacting more severely, and sooner, on biodiversity, water, and all elements of the natural environment.

Professor Will Steffen, at the Switch to Green Conference in Canberra 2008, made clear that we are already over the 450ppm trajectory for stabilisation. (450ppm of co2-e in the atmosphere will deliver at least 2ºC warming). In the last 10-15 years we have been tracking on or above the highest trajectory for both emissions, and temperature rises, that are modelled by the IPCC. Such rises will lead to 20% less inflow into the Cotter and Queanbeyan catchments. At a 1.5ºC increase, rainfall in Canberra will decline by 8% and demand increase by 12% - not allowing for increases in population or industry.

The IPCC has advised that all countries must make emissions reductions of between 25 and 40% by 2020. Bill Hare, an IPCC scientist, has stated that this target will give us a 50/50 chance of keeping temperature rises below 2º. Even a 2º temperature rise will have a devastating effect on the Australian, and the ACT, environment. David Karoly, IPCC Lead Author, University of Melbourne, presented on "Climate science beyond the IPCC" at the 2008 Climate Action Network Australia conference. His statements there have since been supported by the CSIRO and Melbourne University. Their research has shown that even if severe emissions cuts were implemented from 2030, warming of 2.2 to 4.7 degrees can still occur, and if we follow our current emissions pathway, we are tracking for a 7º rise by the end of this century.

Global CO2 Emissions From Fuel Consumption
Comparison of IPCC emissions scenarios and new growth path



Canberrans have the biggest 'ecological footprint' in the world. A move to a better public transport system, higher use of renewable energy, and energy efficiency across all sectors including building and commercial can substantially reduce our emissions at home.

(a) An appropriate target to be established in the legislation, including:

i) An appropriate date for the peaking of greenhouse gas emissions in the ACT

Emissions to peak by 2010

The Conservation Council, in line with the major environmental groups, and the latest science, recognises the necessity of emissions having peaked & begun to decline by 2010. Early and deep emissions reductions can be delivered by implementing energy efficiency initiatives.

Stationary energy is responsible for over 72% of the ACT's greenhouse gas emissions.

Reductions of close to 30% of the ACT's greenhouse gas emissions can be achieved quickly at a little cost to government by following the actions, adoptable immediately, in the paper *"Achieving better energy efficiency in the ACT, how to significantly reduce greenhouse gas emissions in the nation's capital" (Conservation Council 2008* - Appendix 1)

ii) An appropriate target for the reduction of greenhouse gas emissions in the ACT by 2012;

A reduction of at least 10% by 2012

The ACT could easily reduce emissions by 10% by 2012 following the steps outlined in the energy efficiency paper mentioned above. Teamed with an increase in active transport through increased support of the ACTION bus network (The first stage of a comprehensive light rail network should be operational by 2013), increasing the cost of paid parking, introducing paid parking to the parliamentary zone and implementing plans for a 'walking city' will deliver ongoing reductions in emissions additional to the 10% by 2012.

iii) An appropriate target for the reduction of greenhouse gas emissions in the ACT by 2020;

A reduction of at least 50% of greenhouse gas emissions by 2020.
The excuse is often given that the ACT has a small emissions profile compared to other cities in Australia, which has a small emissions profile globally. However Canberrans have the highest greenhouse impact per capita in the world, and one of the highest ecological footprints. We are a well-educated and engaged population, and we are concerned about the impacts of climate change on our children and on our environment. Many of us are taking personal action on climate change, and many more are looking for significant action from government. We can distinguish ourselves as a truly sustainable capital and be a leader both at home and internationally, building on the initiatives of our internationally respected scientists and innovators.
The two major sources of emissions in Canberra are stationary energy use and transport, and we can easily make significant reductions in the greenhouse gasses from both of these.

Energy
As demonstrated in the Conservation Council's energy efficiency paper (appendix 1), stationary energy use can be reduced easily by at least 40%, at little cost to government, through energy efficiency measures. Energy efficiency delivers deep cuts in emissions quickly, easily and equitably.
The Conservation Council joins with over 150 other climate and environment groups in the call for 100% of Australia's, and therefore the ACT's energy to be provided by renewable sources by 2020.

Transport
A comprehensive light rail network can be operational by 2020. Rail is the only form of public transport that achieves modal change, therefore shifting people from car use to the light rail network. By 2015 all government agencies will be using 100% renewable energy, making this a zero-emission transport option. Supported by a frequent, reliable bus feeder system, light rail has the potential to substantially reduce Canberra's traffic emissions. Light rail will increase density in our urban areas, support active transport and reducing greenhouse gas emissions (and biodiversity impacts) associated with greenfields development ('sleeper suburbs').
Canberra can easily reduce its greenhouse gas emissions by at least 50% by 2020, taking advantage of the opportunities of new jobs, education and technology that climate change provides.

(b) appropriate monitoring, reporting and review processes to accompany the target;

Monitoring: Ongoing
Reporting: Annually, by the Minister
Review: Every 3 years by the Commissioner for the environment, with input from experts in the field of climate change, renewable energy and sustainable, low-emission transport.
Reporting back each year will provide the incentive to ensure we do reach set targets.
The reporting mechanism should include a provision for a disallowable instrument, wherein the minister may increase the reduction target due to scientific findings or greater achievability. This will allow the emissions reduction target to be increased in line with any initiatives and technologies that will make deeper cuts in greenhouse gas emissions achievable.

(c) the following issues associated with achieving the greenhouse gas reduction target:

i) the efficacy of existing programs within the current ACT Climate Change Strategy Weathering the Change, and the need for additional programs in the Strategy;

The Conservation Council found "Weathering the Change" to be timid and unable to deliver necessary greenhouse gas emission reductions. This document must be tightened up to SMART standards, so the actions contained are specific, measurable (in terms of greenhouse gas emissions), ambitious, relevant (will be an appropriate mitigation measure rather than an attempt at offsetting, or bringing existing projects under the climate change banner – such as the arboretum) and time-bound.
Funding, outside of very significant projects, must be within the timeframe of the document.
Funding must also be sufficient to achieve what is intended eg Action 8 – "$20m over 10 years for energy efficiency improvements in government housing" needs an additional $30m and to be implemented over 4 years if it is to deliver reductions cuts and a decent quality of life for public housing tenants.
Tree planting is heavily relied on in the climate change strategy, however this is not an appropriate mitigation response. Trees can become diseased, impacting on their ability to absorb carbon, die due to a number of causes releasing carbon back into the atmosphere, increase atmospheric carbon dioxide if they burn. Plantation crops release carbon as they are harvested, and can no longer absorb carbon. There are further issues with the growing of non-indigenous species and their impact on the environment and biodiversity, as well as water use. Trees also take a significant time to absorb atmospheric carbon, and are an offset, rather than preventative of increasing greenhouse pollution.
"Carbon neutrality" is used throughout and is yet not defined. If 'carbon neutrality' involves continuing on in a largely 'business as usual' manner and calling the arboretum an 'offset' this would be a very much wasted opportunity. If it involves reducing energy use and generating/purchasing 100% renewable energy, and offsetting appropriately (through investments in renewable energy) for goods and services that cannot be supplied sustainably, this would be a useful exercise.
Providing rebates for solar hot water systems will do little to address the 30% of household emissions that come from heating water, particularly when applicants for interest-free finance through ActewAGL must already be purchasing 100% greenpower. Mandating a phase-out of electric hot water systems is a meaningful action that will reduce greenhouse has emissions, and also reduce the cost of solar hot water systems through bulk-buy opportunities (for builders and the community) and economies of scale.
Implementing the recommendations in this submission will deliver substantive cuts in emissions.

ii) the ACT's future energy supplies, taking account of the draft ACT Government Energy Strategy due to be published in late 2008 and options for sourcing or producing sufficient renewable energy to meet the needs of the ACT;

A mandatory renewable energy target of 100% renewable energy end use by 2020.
Until the draft ACT Government Energy Strategy is completed and made available we are obviously unable to comment on it. However, any energy policy must contain the following:

- A commitment to source energy from 100% renewables by 2020.
- Look to participate in national funding schemes, therefore taking advantage of economy of scale and an increased revenue base.
- Management of supply and demand.
- Identify and implement energy efficiency measures that are not dependent on national policies.

- Recognise that security of supply will become an issue at some point if using fossil fuels, and address that through the use of renewables.
- Use best practice technology.
- Look to domestic (single) systems as well as community systems for the generation of renewable energy
- Behaviour - the ACT Government does have a certain level of control over pricing, regulation and education, incentives and subsidies. Use financial levers (financial incentives, targeted subsidies and rates) to develop and deliver cost-effective outcomes.
- Green buildings - mandate, motivate. Building green has already shown to to be profitable in the long term. Subsidies should be delivered where they are necessary – to the community, community organisations and low income earners.
- Mandate a phase out of electric hot water units.
- Equity - money should flow back to the community from government, particularly to vulnerable Canberrans. Programs to be flexible, and subsidies tailored to the various incomes - this will allow low-income families to use their allotment as best fits their circumstance (eg low-income homes could benefit more from window treatments than a solar pv array).
- The policy should also be tied to the short term emissions reduction targets identified in this submission.

The intention of ActewAGL to build a 500MW gas-fired 'peaking' power plant should not be countenanced in the ACT. Gas is a fossil fuel. Whilst it is produces less pollutants than coal, if we are to heed the warnings of internationally respected climate scientists and economists, we need to reduce our greenhouse gas emissions as far and as fast as we can. A move to 100% renewable energy will do this. Building another fossil-fuelled power station, capable of providing nearly 200MW more than the ACT's current energy use is a bad practice that sends a bad message. Climate change must be tackled using a raft of policy mechanisms, initiatives and technologies. Reducing our energy use is a very important part of the solution. The buildings we work in and inhabit must be energy efficient and follow good solar design principles to ensure a better quality of life, reduce sickness through better temperature regulation, assure affordability as they are not reliant on electricity use to be comfortable, and reduce the need for, and the use of energy.
We must look to renewable energy to address both elements of energy security. Renewable energy is the only type of energy we can generate in the ACT, lacking coal or gas deposits, therefore the only energy we are not dependent on outside factors to produce. Renewable energy is the only form of energy that is not limited in supply – renewable supplies will not 'run out' as gas and coal eventually will. 'Baseload' solar is a reality, and achievable within the ACT. Wind power is also a growing demand with Actewagl offering a 100% wind power option under their 'greenpower' scheme. Work continues on geothermal in nearby New South Wales. These technologies are growing in their effectiveness as they are supported by governments around the world. Australia has been slow to recognise the potential of renewable energy technology, and has lost many opportunities, initiatives and experts overseas. Whilst $9 billion a year continue to flow to fossil fuel industries nationally, renewable energies will struggle to compete. A mandatory renewable energy target, and incentives to achieve this target will level the playing field. This is an area where the ACT Government can act independently to achieve strong reductions in emissions, boost local industry, education and jobs, and show positive leaderships to governments nationwide.

iii) climate change impacts on the sustainability of existing ecological communities;

The impacts on biodiversity on the ACT Region's biodiversity could be severe. A biodiversity overlay to the Territory Plan, or a revised Spatial Plan is required to ensure ecological communities and corridors are recognized and protected from any new developments.

Desertification

Our region is forecast to get hotter and drier. This process will occur over time, however we are already experiencing the impacts of prolonged drought in the region.

Fire frequency and intensity

More intense, frequent and hotter fires will impact heavily on the ACT region. Scientists have linked the recent tragic bushfire events in Victoria with climate change, and we can expect more of the same, more often over a widespread area in the future.

Areas that don't normally burn as readily, such as wet sclerophyll forest, are expected to be affected by fire, impacting on the communities (both human and ecological) living around them. More regular and severe fires can drastically change some ecosystems due to the inability of "obligate seeders" such as Banksia, Hakea, Alpine Ash etc to re-grow and mature before further fire events occur. Calls for further prescription burning will have massive implications for micro flora and fauna in all ecosystems, effectively sterilising the soil. The same is true of more frequent uncontrolled fire events.

Ecosystem movement

Many species, both flora and fauna will be unable to 'move' to areas more suited to them under changed climate conditions. Firstly, climate change is occurring too quickly for species to find suitable areas to survive (large, slow growing and maturing species cannot mature quickly enough to locate themselves in suitable conditions).

Secondly, current landuses and fragmentation of landscapes means that there are places that cannot be moved across to better locations (corridors of native vegetation have been removed).

Unsuitable temperatures

Some species will be affected by and unable to adapt to warmer temperatures. Higher temperatures can affect seed set etc. Other pest species may adapt well to warmer winters, such as European wasps, currently gaining a greater hold in Kosciusko National Park.

Migratory species

Species which are dependent on migration are affected by various factors resulting from the changing climate. There are already examples of species that migrate to spring feeding and breeding areas to find plants they are reliant on have flowered too early, or they have arrived too late. These species then lose the opportunity to feed and to breed.

Cold stratification species

Some species require certain levels of cold temperature on seed before they are able to germinate (e.g. Snow Gum). As they are not cold stratified over the cold winters, germination is reduced or minimised. Warmer winters also permit establishment of species that require warmer areas. These species can then establish in areas where their germination had been previously stifled by cold temperatures (e.g. frost hollows).

Weeds

There are many species that have naturalised in a minor way, or are being grown but do not naturalise because conditions are not currently favourable to them. 'Sleeper' weeds may find conditions under climate change more suited to establishing and gain advantage over native species, particularly those native species struggling to adapt to the changed climate.

Pathogen activity

It is likely that fungal, bacterial and viral pathogens will increase in warmer conditions.

Reproductive failure
Hotter temperatures and diminishing areas of habitat can affect food supplies and lead to reproductive failure (e.g. heat affecting reptile gender, and bird species losing clutches). Pollination failure will be another significant issue.

Reserved areas
Areas reserved to protect ecosystems may no longer be suitable as the climate changes. There is no opportunity for ecological communities to move elsewhere (due to the loss of corridors). In many cases, particularly in the case of grasslands and woodlands, reserves have been established in the last remaining areas of these ecosystems. Species needing to migrate to survive have nowhere to relocate and face extinction.

Predator/prey relationships
Movement of predators and prey could affect both groups. Introduced predators may be able to establish in wider areas, competing with native predators, particularly impacting on areas where 'prey' species have died out in an area, migrated, or become extinct as a species.

Nutrient recycling
Temperature and moisture levels have an impact on nutrient recycling especially carbon/nitrogen cycles. Hotter and dryer conditions may seriously affect these.

Precipitation patterns
Less rain will affect all ecosystems over time. Large storm events will 'run off' rather than being absorbed into hydrophobic soils. Ground water will not be as readily replenished. Human extraction of ground water may lower water tables even further. Trees and other deep rooted vegetation may perish due to unavailability of ground water.

Water quality issues
Water quality may be effected by reduced flows and a rise in algal blooms etc.

Disease
Plant and animal diseases may have an impact on breeding and food sources due to a loss of habitat availability.

(iv) social equity and economic issues, costs and opportunities in achieving this target;

Climate change will impact most heavily on the most vulnerable in our community. Increased deaths in the aged and very young, higher food prices, a rising cost of living and fuel poverty are some of the issues we face under a changing climate. It is well understood that the price of inaction is far higher than the cost of action. There are many opportunities to ensure that our actions to mitigate climate change are equitable. The Solar Feed-in Tariff is a good example of a mitigation initiative that allows average citizens to play their part in tackling climate change at an affordable cost. The tariff based on consumption, and with an exemption for concession card holders means those with the least amount for discretionary spending are not impacted by the feed-in tariff, as they will be impacted by rising electricity costs (ActewAGL requested double the price rise for electricity it requested due to drought impacts on the Snowy Hydro in 2008).
Energy efficiency and eduction deliver significant cuts in emissions, and also raise the standard of living for the poorest in our community. Mandating for rental properties to meet at least 2 star energy efficiency, and providing ceiling insulation to low-income home owners (the majority of whom are old age pensioners) increases the 'live-ability' of a house as well as reducing electricity bills.

Building developers, already seeing higher returns as a result of investing in greener buildings, recover any costs on their initial outlay, and then go on to profit from their greener buildings. Not-for Profit organisations should be assisted to continue their important work (such as aged care, mental health outreach, environmental support etc) in the face of increased costs of tenanting inefficient building, through assistance with energy efficiency measures.

(v) the relationship between the ACT's legislated target and policy and measures agreed to and implemented at a national level;

The ACT Government should work actively in the COAG forum to ensure that the ACT is in a position to influence national climate change policy. The success of locally implemented policies, such as the gross-metered feed-in tariff, will act as an impetus for their nation-wide take-up. The ACT through implementing initiatives such as this, can position itself to further the national agenda on tackling runaway climate change.
It is imperative that reductions in greenhouse gas emissions in the ACT do not free-up permits for re-allocation of these emissions, which is very likely under the CPRS. The ACT must actively campaign to ensure that the work we do at home does not free-up pollution permits for any other agency.

(vi) the acceptability of local and offshore offsets;

Given the substantive reductions that can be achieved with relative ease in a short time-frame (appropriate commissioning of air-conditioning in a commercial building can raise its energy efficiency level by as much as 2 star ratings) there is no need for the ACT to offset anywhere to achieve a 50% reduction in greenhouse gas emissions by 2020.
Offsets will allow the ACT to continue to emit greenhouse gasses and therefore not deliver the reductions necessary if we are to attempt to avoid runaway climate change. Given the scope of the climate emergency we must be aiming toward the use of 100% renewable energy for the stationary energy we do use, and work towards achieving zero-emission public transport (which can be achieved with light rail) that provides a frequent and reliable service.

(vii) the need to ensure that the ACT does not transfer its greenhouse emissions to other jurisdictions;

Stationary energy use is responsible for over 70% of the ACT's greenhouse gas emissions. Reducing wasted energy through education programs, efficiency measures and a renewable energy target of 100% by 2020 will deliver real, substantial and immediate reductions in the ACT's greenhouse gas emissions.
If the ACT remains dependent on fossil fuels, it will be forced to import energy (in the form of electricity or gas). This leaves us vulnerable in terms of our reliance on outside states and corporations, and could impact on the security of supply. Clearly, local production and generation is favourable. It is also pertinent to take into consideration the fact that fossil fuel supplies are limited. It makes sense to put in place the right infrastructure now to ensure that we produce and generate our own energy locally, and save ourselves from a costly changeover in the future. Renewable energy is the only way to achieve this. Transmission losses from electricity generated outside the ACT are not currently counted in our emissions profile but are our responsibility. Locally generated, clean energy will prevent these emissions, along with all emissions from burning coal.

(viii) the adequacy of existing data collection and methodology for the purpose of establishing a baseline year of 1990 or 2000 and for future monitoring and reporting purposes; and

The 2003 Environment Commissioner's report shows a 12% increase in greenhouse gasses in the 10 year period between 1990-2000

"An 'average' Canberran was responsible for 12.8 tonnes of Greenhouse gases (measured as carbon dioxide equivalents) in the year 2000. This adds up to 3.980 million tonnes of Greenhouse gases for the ACT population as a whole, which is an increase of 12% since 1990 (see the table below)."

Table: Greenhouse gas emissions from the ACT

Emissions sources	Emission estimates (Mt carbon dioxide equivalents)			
	1990	1997	2000	2008*
Gas	0.128	0.264	0.292	0.495
Electricity	2.238	2.243	2.363	2.658
Transport	0.787	0.921	0.954	1.043
Waste	0.335	0.346	0.305	0.341
Other	0.068	0.071	0.670	0.067
Total	3.557	3.846	3.980	4.605

Source: http://www.environmentcommissioner.act.gov.au/soe/2003actreport/climateandgreenhouse03

1990 is the accepted base-level year following international agreement at Kyoto. Australia has recently deviated from this to use to year 2000 as a baseline. As shown above, there was a 12% increase in greenhouse gases from 1990 to 2000 in the ACT. If the year 2000 continues to be used as the base-level year, targets will need to be adjusted to ensure the 12% increase is also accounted for, however this will leave us 10 years out of step with other countries that are signatories to the Kyoto Protocol. This is another area in which the ACT should push the national agenda to a more acceptable outcome.

(ix) any other related matter;

Climate change has not been given due consideration, politically, in the ACT for some time. We are a long way behind the goals set in the "ACT Greenhouse Strategy" of 1999, and lack an ambitious, well-researched, adequately funded plan to replace it.
The challenges of climate change are also its opportunities. In a time of global financial crisis, we can make investments in infrastructure that will provide us with clean energy, with new jobs, and a light rail network utilised by the majority of our population. We can reduce the pressures on ecosystems already suffering by appropriate planning that reduces the need for greenfields developments.
It is important that serious mitigation initiatives are carried out in an equitable manner. Indeed, providing those least well-off in our society with a home that is comfortable and meets basic living standards is another benefit of implementing energy efficiency measures, and will also assist them cope with the rising cost of living.
Many companies that are urging the need for constraint will benefit from mitigation, and some, such as those

who are developing green buildings, already are.
Advances in technology and infrastructure will provide new employment opportunities in installation, development and research.

A rethink of planning to take the carbon footprint of all developments into consideration is necessary. Any new development should recognise the ecological value of the land it sits within. Public transport must be accessible, reliable and affordable. Walking and active transport should be encouraged, by locating goods and services within suburban areas. Dwellings designed to make use of the sun for light and warmth, and blocks faced appropriately to ensure enough solar access for passive heating, growing food, powering photovoltaic systems, and greater amenity. Extensions must meet the same or greater energy efficiency standards as the houses they are attached to, and electricity sourced from local, renewable sources. Roads are designed for effective speed and safety, and used less frequently than an integrated multi-modal rapid transit system based on a comprehensive light rail network.
Clear guidelines that take into account the carbon footprint of any development or renovation will make our homes and workplaces more energy efficient, ease the reliance on car-based travel, and cut greenhouse gas emissions.
Our homes and suburbs will be more liveable, encourage better community relationships, better health, and better greenhouse outcomes.
A carbon audit tool would look at every stage of development, from the siting of new suburbs, to the efficiency requirements of extensions. A new energy efficiency rating tool for dwellings is an integral part of the wider carbon audit tool.
A shift to 100% renewable energy, and a light rail network are all opportunities provided by climate change that will have benefits beyond meeting an emissions target.

For any further information, or to arrange an interview, please contact the Conservation Council: 6229 3200

Yours Sincerely

Genevieve Wauchope
Climate campaigner

Appendix 1 - “Achieving better energy efficiency in the ACT, how to significantly reduce greenhouse gas emissions in the nation’s capital” (Conservation Council 2008)

achieving better energy efficiency in the ACT

how to significantly reduce greenhouse gas emissions in the nation's capital

CONSERVATION COUNCIL

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Expert Roundtable on Energy Efficiency in the ACT

In April 2008 the Conservation Council ACT Region convened a roundtable of experts to discuss the problem of rising greenhouse gas emissions in the ACT and to develop specific recommendations on how to reduce them.

The roundtable developed this set of tangible, achievable actions adoptable immediately to complement and further climate change initiatives already underway in the ACT.

The roundtable consisted of experts in climate, energy and social justice, as well as leaders in the commercial sustainability field.

Contributors

Andrew Macintosh is an environmental law and policy expert and Associate Director of the ANU Centre for Climate Law and Policy. After leaving university, Andrew worked as a solicitor at Mallesons Stephens Jacques and Minter Ellison, where he was a member of the firm's environmental and planning law group. Prior to joining the ANU College of Law, Andrew was Deputy Director of The Australia Institute and has previously worked as an environmental advisor to the Australian Democrats.

Tom Snow is Executive Director of Canberra International Airport. He is responsible for environment and sustainability issues at the Airport, including in the early implementation of future development opportunities. Tom was responsible for Australia's first Green Star rated building, achieving a rating of 5 Green Star, and lectures regularly at national sustainability forums. After finishing his Rhodes Scholarship where he completed a Masters in Sustainable Development Economics at Oxford University, Tom worked at the United Nations in New York setting long-term sustainable economic development policy for both the United Nations and its agencies in implementing the UN's Millennium Development Goals.

Peter Sutherland is a solicitor and Director of SoftLaw Community Projects Ltd in Canberra. He is a consultant in the fields of Commonwealth compensation law, income support law, and residential tenancy law. He is the ACTCOSS Representative on the National Consumers Round Table on Energy, and Chairperson of the ACT Essential Services Consumer Council.

Ray Prowse is Centre Manager at the Centre for Sustainable Energy Systems at the ANU. For ten years Ray worked in management roles with the Business Council for Sustainable Energy and its predecessor the Sustainable Energy Industry Association. He set up a national standards, training and accreditation scheme to effectively award licenses to tradespeople to design and install solar energy systems. He also represented the solar energy industry in community, industry and government relations. Ray has also taught Certificate IV in Renewable Energy Technology (including Energy Efficient Building Design) at TAFE level in Victoria, and been a builder in Victoria, putting solar energy theory and energy efficient building theory into practice.

Trish Harrup was the Director of the Conservation Council ACT Region when the roundtable was held. She joined the organisation in 2002 as a community campaigner focused on household behaviour change to reduce greenhouse gases before moving into the role of Director in December 2003. Trish graduated with a Bachelor Degree (Honours) in Economics then moved to Canberra to complete a Masters in Environmental Science at the ANU. After graduating Trish worked as a policy analyst with the Canberra based consultancy firm, Energy Strategies. She is now Senior Energy and Climate Campaigner for Greenpeace Australia.

Genevieve Wauchope is the Climate Campaigner for the Conservation Council ACT Region. She joined the organisation in late 2006 to co-ordinate the Walk Against Warming events, and has since campaigned on national and local climate, energy and transport issues.

Solutions Available Now

Reducing greenhouse gas emissions in the ACT can be relatively easy. The solutions provided in this paper are available to us now, and, with initiative and leadership, can be implemented now. As the ACT does not have major industry, coal mining or other big greenhouse polluters, we are in a unique position to take action to quickly and easily reduce our emissions.

However, the ACT's greenhouse gas pollution is still increasing. In a time where we could be leading the country on initiatives to address runaway climate change, we are lagging behind. There is an opportunity to turn this around.

72% of Canberra's greenhouse gas emissions are the result of stationary energy: energy used for electricity generation, fuels consumed in the manufacturing, construction and commercial sectors, and domestic heating. The roundtable of experts considered how and where this pollution occurs in order to identify specific, action-oriented solutions.

The Actions

Residental Buildings

Over one third of Canberra's per capita greenhouse gas emissions arise from residential buildings, and the number of dwellings in the ACT is increasing; the total number of dwellings in 2007 was 124,620, in 1996 it was 92,250.

Dwellings

1. A new energy efficiency rating tool
The current Energy Efficiency Rating (EER) is based on meeting a minimum standard, rather than best-practice, and its inclusion of discretionary objects, such as curtains, has seen houses consistently fail to meet the 5 star standard to which they are legally obliged.

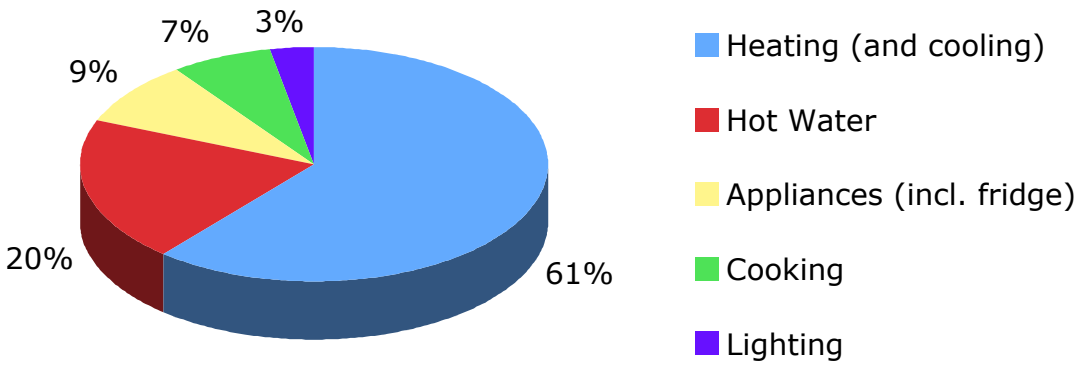
Action: Provide $150,000 funding for a senior officer position to review the current energy efficiency rating and to produce a product which removes discretionary objects and is comprehensive enough to include heating systems and appliances in the rating.

2. Phase out electric hot water systems
Electric hot water systems are responsible for a third of a household's greenhouse emissions. 70% of Canberrans use electric hot water systems.

Action: Phase out electric hot water storage units. All new installs and replacement systems to be solar hot water, electric heat pump, 5 star instantaneous gas or 5 star gas storage systems within two years.

3. Education programs
Deep cuts in energy use can be achieved by educating people on how to save energy in the home and work place. Directed education programs are necessary to ensure tools to achieve energy efficiency are understood and utilised for home owners and renters, and for commercial and retail tenants. Funded programs elsewhere have led to up to 50% efficiency gains in public housing.

Action: Fund a directed education program on energy efficiency to be delivered by a community sector organisation and involving capacity for face-to-face engagement with key householder groups, e.g. public housing tenants and private renters.



Energy use in the average Canberra household

Public Housing

Public housing makes up 8% of ACT households (around 11,500 properties).
Current programs for this area:

- **$20m committed over ten years for energy efficiency in *Weathering the Change The ACT Climate Change Strategy.***
- **New purchases to meet 4 star Energy Efficiency Rating (with exceptions).**

1. A 4 star Energy Efficiency Rating for all public housing

The current ACT Government policy is that all new dwellings purchased by Housing ACT are required to have a 4 star Energy Efficiency Rating (EER). Many older houses fall below that standard, impacting on quality of life, with high level energy requirements to heat and cool. These dwellings need to be retrofitted so all ACT Housing properties meet a 4 star energy efficiency standard.

These are houses of which the Government is lessor, and tenanted by those most vulnerable to the increasing cost of living. Moves must be made now to ensure tenants of public housing enjoy a reasonable standard of living and are protected against the price hikes of rising energy costs. This can be achieved by providing audits, education and retrofits, including curtains, to achieve a minimum 4 star standard in each dwelling.

Action: That the $20 million allocated to energy efficiency in public housing in *Weathering the Change* be augmented by an additional $30 million and the total fund be spent over the next four years.

2. Window treatments

Window treatments are a cost-effective means of reducing energy use in the home, however there is currently no provision for curtains or pelmets to be included in public tenancies. Curtains and rods installed by the tenants must be removed on vacating the property, and damages may be incurred for installing pelmets.

Action: Establish a ‘pelmet program’ to install pelmets and curtains rails in public housing. Tenants to be encouraged to care for and leave curtains in the property on vacating.

3. Curtain library

Curtains and pelmets are an important inclusion in any retrofit, and increase the efficiency gains of a dwelling. Housing ACT does not currently provide, or allow for, curtains and pelmets to be installed beyond a tenancy. Many tenants are unable to afford to purchase curtains.

Action: Engage with the community sector to establish a ‘curtain library’ for public housing tenants who are unable to afford curtains.

Private Rental

19.4% of ACT households, or 24,176 properties, are privately owned rental properties. There is currently little incentive for home-owners to spend extra on properties they don't inhabit, or tenants to invest in a property they don't own.

Current programs for this area:

- **Home energy audits through HEAT (the ACT Government funded Home Energy Advice Team) can be carried out on rental properties.**

1. Funding to educate lessors and tenants

About half the private rental properties in Canberra under-perform on energy efficiency. Lessors are not aware of assistance available to them to improve their property, and tenants are not aware of their right to live in a functional home. Funding provided for an education campaign targeting lessors on energy efficiency and the subsidies available to them will encourage more lessors to improve their rental properties. Providing education to tenants on the lessors 'obligation to repair' will lead to efficiency gains through repair of broken appliances and fittings, such as doors and windows.

Action: Provide funding for an education program targeting lessors and tenants focusing on energy efficiency, subsidies and rights.

2. Double the HEAT subsidy for lessors

There is currently little incentive to impel lessors to spend extra on an investment property. Increasing the subsidies offered through the HEAT program will provide greater financial incentive for lessors make rental dwellings more energy efficient. Where this is passed on as a higher rental price, the tenant will benefit through savings on electricity bills.

Action: Increase the subsidy available through the HEAT program, from $500 to $1,000, for each $2,000 spent by lessors in implementing the recommendations of an HEAT energy audit.

3. 2 stars equal 'fit for habitation'

To prevent unscrupulous lessors from investing in sub-standard properties for the rental market, rental properties should meet at least 2 star EER to be considered 'fit for habitation.' Mandatory performance requirements should include, but are not limited to: ceiling insulation, window treatments, pelmets and draft sealing.

Action: Amend the Residential Tenancies Act to require a dwelling to meet a minimum of 2 star EER to be deemed fit for habitation.

Action: The Residential Tenancies Act provision to pass on water consumption costs be made contingent on a dwelling meeting water and energy efficiency standards.

4. Mandatory disclosure of star rating by 2010
To bring the rental market into a regulatory framework consistent with the retail market all properties advertised for rent should include disclosure of the energy efficiency rating.

Action: Mandate that energy efficiency ratings are disclosed for all properties advertised for rent by 2010.

Owner Occupied

This is the majority of the residential market, and is growing. There are 94,586 properties increasing by 1,400 new houses annually, with another 750 new extensions each year. 27.3% are outright homeowners, 42.5% are mortgagees and 6.1% are low-income owner-occupiers.

Current programs for this area:

- **New houses to meet mandatory 5 star Energy Efficiency Rating**
- **Mandatory water-saving shower heads in all new buildings**
- **ACT EnergyWise program funded for 4 years, 1,387 audits carried out, 597 rebates paid**
- **A rebate of $500 when $2,000 is spent on HEAT efficiency recommendations**
- **Home Energy Advisory Service, includes small business, has responded to 8,331 inquiries in 5 years.**

1. Provide ceiling insulation to low-income home owners

Approximately 6.1% of ACT households are low-income owner-occupied. Most of these are pensioners, mainly on age pensions. This group of people are on a low or fixed income with no access to capital, are not able to absorb increased energy costs easily, and are not in a position to make necessary investments to increase the efficiency of their homes. The maximum number of households that fall within this category would be 7,601. Some, but not all, will be without ceiling insulation. To provide ceiling insulation to these households, including program management, would cost a maximum of $3.5 million. Installation of the batts could be done through partnerships with local community organisations, such as Rotary or Conservation Volunteers Australia to keep costs to a minimum.

Action: Establish a fund of $3.5 million to provide ceiling insulation for low-income home owners occupying uninsulated homes.

2. Extend the HEAT rebate payable time from six to 12 months

Currently, home-owners are eligible for a $500 rebate if they spend $2,000 within six months of a HEAT Audit. The uptake of the $500 rebate has been low and it appears that the time provision is insufficient, particularly for those on lower incomes, or those who are still paying off their home, to make the necessary improvements to the energy efficiency of their home.

Action: Increase the time allowed for rebate following a HEAT audit from six months to 12 months.

3. Audit new dwellings for compliance

New dwellings are currently required to meet a 5 star Energy Efficiency Rating. These dwellings are not physically audited for compliance. As a consequence, many new homes fail to meet the current requirements, leading to higher energy use, higher electricity bills, and higher emissions.

Action: Provide $300,000 funding for two senior officer positions to carry out physical audits of all new dwellings for compliance to the current Energy Efficiency Rating requirements.

Commercial and Retail

Over 40% of Canberra emissions per capita are from the commercial sector, which has a total floor space of 2 million m^2. The majority of these buildings are 3 star or 'significantly lower' however there is the possibility to retrofit cost-efficiently. Energy efficiency in this area has been identified in the McKinsey report as the 'least-cost carbon abatement solution'.

It is currently Commonwealth Government policy to tenant 4.5 star NABERS Energy buildings. The National Australian Built Environment Rating System (NABERS Energy) is a performance based energy rating system that now incorporates the Austalian Building Greenhouse Rating (ABGR).

Retail accounts for 879,967 m^2 of floor space. A pilot Green Star tool to rate the efficiency of retail buildings has been developed.

1. Efficiency standards for ACT Government buildings
Higher energy efficiency standards in commercial buildings create a more productive, healthier working environment as staff take fewer sick days, and are more comfortable in their working environment. Lower energy bills are also assured. The Commonwealth Government currently requires all new tenancies to meet a 4.5 star NABERS Energy. This is being currently being reviewed and is likely to increase to 5 star.

Action: ACT Government match the Commonwealth Government policy and require a minimum 5 star NABERS Energy rating for all new ACT Government tenancies and all major refurbishments. This policy is to be reflected in ACTPLA guidelines.

2. NABERS Energy standards for all new buildings
The technology is available to achieve far better energy efficiency outcomes from new commercial buildings in the ACT. Where there is a requirement to do so, new buildings are now meeting 4.5 and 5 star NABERS Energy ratings. This should be the minimum standard achieved by industry.

Action: From 1 July 2009, all new building development applications and major renovations must meet a minimum 4.5 star NABERS Energy rating for approval. From July 2011, this must increase to a minimum 5 star NABERS Energy rating.

3. Education programs
Tenants of commercial buildings are lacking the information to improve their energy efficiency. Funded education programs elsewhere have resulted in 40% savings in government departments.

Action: A funded education program for all tenants of commercial buildings be rolled out.

4. Mandatory disclosure of base-building NABERS Energy
To achieve better efficiency outcomes across the commercial sector, and allow potential buyers and tenants to make an informed choice about the efficiency of a building there needs to be

disclosure of the building's energy efficiency. To be effective in informing consumer choice, the mandatory disclosure of the base-building NABERS Energy rating must be made at point of lease or sale. The obligation to certify and disclose the NABERS Energy rating should rest on the building owner, rather than the tenant.

Action: Mandatory disclosure of base-building NABERS Energy rating for all commercial buildings that have a floorspace of or exceeding 2,000 m^2, and including strata units which have split services.

5. Mandatory disclosure of energy consumption for the retail sector
To achieve a better greenhouse outcome from the retail sector, to assist the sector in the implementation of effective education programs to save energy, more information needs to be available about energy consumption. This will also allow prospective tenants to make an informed decision about the efficiency of the space they choose to inhabit.

Action: Mandatory disclosure of energy consumption per m^2 of retail space (or gross leased area) for all retail buildings to be completed annually.

6. Feasibility study into tri-generation for new and existing developments
Tri-generation - using gas for electricity generation on site, and the waste energy to heat and cool buildings - creates substantially less greenhouse emissions than coal-fired electricity. Selling excess electricity back to the grid will replace coal-fired electricity, and further reduce emissions. A feasibility study is required to determine opportunities to retrofit tri-generation power into commercial buildings and large residential developments, such as the City West development, and for new developments, such as Molonglo, of over 40,000 m^2.

Action: Fund a feasibility study to identify and assess opportunities for small scale tri-generation in commercial and residential developments and redevelopments.

Sources

The Australian Bureau of Statistics:
Survey of Income and Housing
The Census

National Centre for Social and Economic Modelling, University of Canberra (NATSEM)

Canberra Spatial Plan

Weathering the Change. The ACT Climate Change Strategy

Emissions percentages based on residential, transport and commercial emissions per capita.

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