Downer ACT 2602
14 April 2009

Dr Hanna Jaireth
Secretary
Standing Committee on Climate Change, Environment and Water
ACT Legislative Assembly

Submission to the Inquiry into ACT Greenhouse Gas Reduction Targets

Dear Dr Jaireth

I was born in western Victoria, where my parents built a waterfront home on the shore of Lake Colac. In 1982 I moved to Canberra, and from 1998 to 2006 I worked in the Australian Greenhouse Office.

The Australian Government policy has been that Australians should emit five times the global average of greenhouse emissions until 2012, four times until 2020, and more than twice the year 2000 average until 2050. These policies have been presented using the spin of "reduced emissions."

Greenhouse office staff were not permitted to refer publicly to per capita emissions. I asked Howard Bamsey, the Chief Executive of the Australian Greenhouse Office, about the Environment Minister's views on reducing Australia's per capita emissions to the level that, if applied globally, would stabilise the climate. He was unable to answer. Apparently nobody had discussed that issue with the Minister.

Summary

Canberra's future viability may largely depend on the behaviour of the people of India, China and other developing countries.

If Canberrans demonstrate that they are prepared to reduce their emissions to a sustainable level, then that will send a message to the rest of Australia, to China, to India and to the rest of the world, that we are genuine when we ask them to constrain their emissions.

Transport represents a quarter of Canberra's greenhouse emissions. I recommend several actions to enhance Canberra's ability to reduce transport emissions.

Recommendations

I recommend:

1. if it has not already done so, that the ACT Government review Canberra's likely water availability through to the year 2050, under a range of climate scenarios.

2. that Canberra set itself the globally generous targets of matching current average greenhouse emissions (4.3 tonnes CO_2 per person) by 2020, and reaching a sustainable level (1.1 tonnes per person) by 2050.

3. that the ACT Government commence a campaign to educate Canberrans about the benefits of medium and high density living.

4. that Canberra's planning and rate structures encourage:

   - greater population densities, especially within (and within walking distance of) shopping centres and town centres, by measures such as rates incentives for building additional bedrooms in dwellings in these areas;

   - integrating corner stores and other businesses into residential areas;

   - greater population densities within walking distance of main bus routes; and

   - more local employment in the outlying town centres.

5. that the ACT Government provide Canberrans with a Geographic Information System based on-line tool to provide information about distances from any given house location to schools, shops and major town centres, so that when choosing where to live, Canberrans will be able to compare the travel requirements of different locations.

6. that the ACT Government adopt a policy that it will no longer discriminate against walking.

7. that the ACT Government undertake the following actions as part of this non-discrimination policy:

   - pursue an amendment to the *Australian Road Rules*, requiring cars to give way to pedestrians who are forced to walk along roads.

   - amend the "*Future Urban Areas Residential Subdivision Development Code*" to require "Access Street A" class streets to be made safe for walking, either by including footpaths or by having a 30 km/h speed limit.

   - set a date for completion of its footpath retrofitting program, by which time all Canberra streets with speed limits of 50 km/h or more will have footpaths or on-road walking/shared lanes.

   - comprehensively review the programming of traffic lights, to eliminate unnecessary pedestrian delays and to synchronise traffic lights for pedestrians making turns or crossing dual carriageways.

The remainder of my submission consists of the following parts:

What might happen to Canberra if we do not stabilise the climate?

Water is essential to the survival of crops, livestock and people. High productivity irrigation farming is only possible when water is abundant.

Drought-induced water shortages have affected Australia's ability to grow rice, to the extent that Australia's largest rice mill, in Deniliquin, was forced to close in 2008[1] due to lack of rice production.

The current drought is widely regarded as the most severe on record. Yet according to historian Geoffrey Blainey, rainfall in the current drought has been higher than in 1902 - the worst year of the 1894-1902 Federation Drought, and also higher than the second-lowest recorded rainfall year of 1905[2]. The severity of the current drought has been intensified by greater evaporation, due to higher temperatures resulting from global warming.

The severity of the current drought is shown by the fact that many lakes in Western Victorian have dried up. Ballarat has a climate similar to Canberra's. Its jewel, Lake Wendouree, had dried up by 2008. I believe that it recently experienced a grass fire! Colac has a wetter climate than Canberra's. According to a 1947 army survey map, Lake Colac (below) had an average depth of 4'6". In 1969 two men drowned on the lake when their dinghy capsized. In January 2009 Lake Colac dried up completely, for the first time since Europeans first settled the area in 1837.

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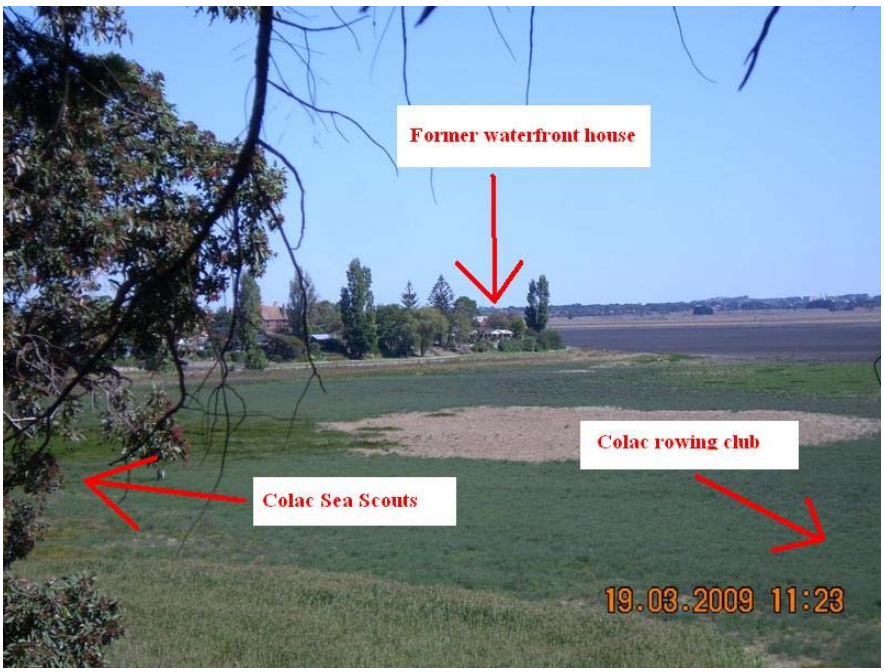
[1] ABC News, "Deniliquin buckles under Murray Darling crisis," http://www.abc.net.au/pm/content/2008/s2333222.htm, accessed 9 April 2009.

[2] Christian Kerr, 'Blainey buckets the "one in a hundred year" hype,' Crikey, Thursday, 4 October 2007. http://www.crikey.com.au/Politics/20071004-Blainey-buckets-the-one-in-a-hundred-year-hype.html, accessed 9 April 2009.



Lake Colac, 2009

If current trends continue, many of Australia's rural areas – including possibly Canberra – will become uninhabitable due to lack of water.

What emissions targets will stabilise the climate?

The world's 6 billion people each emit about 4.3 tonnes of CO_2, making a total of 26 billion tonnes. Climate science indicates that we need to reduce emissions by 60% (i.e. to 10.3 billion tonnes, or 1.7 tonnes per person) if we are to stabilise the climate.

The world's population is set to increase to 9 billion by 2050[3]. This means a 2050 emissions target of 1.1 tonnes of CO_2 per person.

What if other countries match Australia's current targets?

In 2006 the average Australian emitted 19 tonnes of CO_2. Under the Australian Government's current targets this will fall to 14 tonnes by 2020 and five tonnes by 2050. An Australian born in 1990 will by 2050 be responsible for emitting 750 tonnes of CO_2 – an average of 12½ tonnes per year.

It can be argued that people in developing countries are entitled to emit more CO_2 than people in developed countries, for three reasons:

[3] UN Population Division's annual estimates and projections (medium projection, code 13660).

1. people in the developed countries have a greater responsibility for the existing build-up of atmospheric greenhouse emissions;

2. for a family in a developed country, a given percentage reduction of emissions can result in the inconvenience of a reduced standard of living; for a peasant family in an underdeveloped country, the same percentage reduction can be result in death by starvation due to reduced crop yields;

3. people living in poverty should be allowed to emit additional CO_2, to allow them to raise their standard of living closer to that enjoyed in countries like Australia.

While those arguments have merit, this submission assumes that people in developing countries have **no more right than Australians** to emit CO_2.

The average person in India currently emits one tonne of CO_2 per year. Indians have a very low standard of living. They aspire to industrialise and improve their living standards. This means increasing greenhouse emissions. If Indians constrain their emissions so that they average 12½ tonnes per year for the period 1990-2050, then for this period **global emissions will be 50 per cent higher than at present**.

The average person in China currently emits three tonnes of CO_2 per year. If they constrain their emissions to 12½ tonnes per year for the period 1990-2050, then **global emissions will increase by a further 40 per cent**.

If the rest of the world follows the example of Australia's current emissions targets, average annual global emissions for the period 1990-2050 will be **250% of the current total.**

The ACT can help Australia to enlist cooperation from India and China

To stabilise the climate, we need to reduce global emissions by around 60%.

- If the average Canberran completely eliminates his or her 13.7 tonnes CO_2-e[4] of greenhouse emissions, that will reduce total global emissions by 0.00000005%.

- If the ACT becomes completely carbon neutral, that will reduce total global emissions by 0.017%.

- Even if the whole of Australia completely eliminates our 398.6 Mt CO_2 of greenhouse emissions[5], that will reduce global emissions by only 1.5%.

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[4] ACT State of the Environment 2007, Indicator: Greenhouse gas emissions, http://www.envcomm.act.gov.au/soe/2007actreport/indicators07/greenhouse07, accessed 9 April 2009.

Canberrans' emissions have negligible direct impact on global warming, but they do signal to the rest of the world the level to which we are serious about addressing global warming.

The ACT can influence Australia's approach to global warming. If the people of the ACT and the rest of Australia commit to reduce our emissions to a sustainable level, then China and India may accept that the developed countries are serious about the problem.

Appendix 1 provides more detail on some ways we can reduce our transport-related emissions. Transport accounts for a quarter of Canberra's greenhouse emissions.

I will be pleased to provide more information or to meet with the Standing Committee, should the Committee wish me to do so.

With my best regards

Leon Arundell

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[5] *National Inventory Report 2006*, Department of Climate Change, 2008.

Appendix: Some ways to reduce Canberra's transport emissions

Transport is estimated to produce about a quarter of all greenhouse emissions in the ACT.[6]

Canberra households will benefit economically from reducing our car use. We will gain more than twice those economic benefits if we forego purchasing a second or third car because we are confident that we can use other forms of transport to meet our needs. According to the NRMA[7], a medium car costs from 31 cents per km (around $4,700 per year) in running costs, and more than twice that – around $10,000 per year – in whole of life costs.

Canberra's transport emissions are largely determined by two things:

1. mode of transport; and
2. distances from home to school, work and shops.

Mode of Transport

Greenhouse emissions depend primarily on the mode of transport, which in turn is strongly influenced by distance.

Car travel produces 0.04 to 0.44 kg of greenhouse emissions per person-kilometre, public transport produces at least 0.003 kg, and emissions from cycling and walking are regarded as negligible[8].

Nineteen per cent of all trips In the Netherlands are walking trips, but virtually no trips over 7.5 km are walked; the proportion of trips by bicycle increases from 2% for trips over 15 km, to 15% for trips of 7.5 to 15 km, and 34.5% for trips under 7.5 km[9].

Canberra has 50% more cycle paths than Copenhagen; yet Copenhageners make ten times as many cycle trips (35%) as Canberrans. The main reason for this difference is distance – 1.15 million Copenhageners occupy 180 sq km, while 330,000 Canberrans take up 800 sq km. This means that Copenhageners are 15 times as likely as Canberrans to live within walking or cycling distance of a school, workplace or shop.

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[6] *Weathering the Change - Action Plan 1 2007-2011*, Australian Capital Territory, 2007.

[7] NRMA Motoring + Services *2008 Private Whole of Life Vehicle Operating Costs Report* http://www.mynrma.com.au/cps/rde/xbcr/mynrma/2008_Private_Operating_Costs_Report_Summary.pdf. accessed 11 April 2009.

[8] *Global Warming Cool It*, Department of the Environment, Water, Heritage and the Arts, http://www.environment.gov.au/settlements/gwci/transport.html accessed 11 April 2009.

[9] *Cycling in the Netherlands 2009*, Ministerie van Verkeer en Waterstaat, Fietsberaad http://www.fietsberaad.nl/index.cfm?lang=en&repository=Cycling+in+the+Netherlands .

Copenhageners also boast that their average wealth is greater than that of the citizens of the USA. Because they spend less on cars, they have more to invest.

Distances from Home to School, Work and Shops

For a given mode of transport, transport emissions are proportional to trip distance and to the frequency of trips.

The distances that Canberrans travel are largely determined by the distance from their homes to regular destinations such as schools, work and shops.

A parent who drives their child to school will make up to 2,800 return trips between home and school in the seven years that their child spends at primary school.

In the same seven years, they will make 1,600 return trips to work.

In Melbourne's South Yarra it can be quicker to walk to your local shop than to walk to your car, because many high-rise buildings have enough tenants to support a shop on their ground floor.

Glenelg in South Australia has mix of detached houses and low-rise apartments, providing a population density sufficient to support several supermarkets within a 200 metre radius.

In low population density Canberra we generally consider ourselves to be "close" to shops if the nearest supermarket is 500 metres away.

A transit-oriented Canberra

Canberrans who live in outer areas such as Gungahlin and Tuggeranong must travel long distances to reach the larger town centres.

We can reduce the need to make these long journeys by increasing the amount of local employment and schooling and by locating more people close to schools and shops.

We can make it more practical to make these journeys by bus if there are more residences within walking distance of the trunk bus routes.

In many parts of Australia it is common for shops be located within residential areas rather than in separate shopping centres, and for retail premises to include residences for shopowners or tenants. This makes shops more accessible to more people, and reduces the need for people to drive. Canberra's planning laws could be changed to remove disincentives and/or offer incentives for these types of development.

Portland, Oregon in the USA used council rate incentives to encourage people to build extra bedrooms in new and existing dwellings that were within walking distance of its new rail system. This put more potential customers within reach of the rail system, and within reach of the businesses associated with the rail system.

Canberra can use similar incentives, together with planning regulations, to encourage higher population densities in and near its shopping centres, town centres and main bus routes. This will reduce the need to travel by car, and improve the viability of the ACTION bus system and of local businesses.

Provide Canberrans with information about distances to schools and shops

Canberra has an Energy Efficiency Rating scheme that provides information about the energy costs of prospective houses.

Queensland Transport's "Home Location Choice" project in Townsville demonstrated that people moving to Townsville chose to live closer to work, if they were provided with transport information when choosing where to live.

The ACT Government could provide a web-based Geographic Information System to show Canberrans the distance from a prospective home to schools, shops and town centres.

Educate Canberrans about the benefits of medium density living

Canberrans appear to be under-educated about the linkages between population density and the viability of local schools and businesses.

Many Canberrans protested against the closing of their local school or their local shops. These are often the same people who oppose dual occupancies and medium density residential developments that would improve the viability of their local schools and shops by providing more local school pupils and shop customers.

Reduce discrimination against pedestrians

Allow people to walk safely on roads that have no footpaths

The Australian Road Rules do not permit people to walk along roads unless it is impractical to walk on the footpath or nature strip.

Cars are not required to give way to pedestrians walking on roads, unless the car is turning left and the pedestrian is walking across the street that the car is turning into.

This creates special problems for people walking on the road, especially for parents who cannot easily move off the roadway because they are pushing baby carriages.

Provide footpath access to all houses

Every house in Canberra has road access; yet some suburbs have no footpath access to houses in up to a third of their streets. An entire class of Canberra streets – *Access Street A* – allows cars to travel at 50 km/h but is not required to have footpaths.

The absence of a footpath encourages people to drive rather than walk. It also affects mobility in the following ways:

- parents pushing baby strollers, and people using skateboards, rollerblades or skates, can be forced to walk along the road because it is difficult for them to use the nature strip – especially if it is obstructed by car parking or by landscaping;
- it restricts children's ability to access footpaths and cycle paths, until they are old enough to cycle on the road unsupervised;

Access Streets A can be eight metres wide – wide enough for three lanes of traffic – and are designed for less than one car each three minutes. An existing Access Street A can easily accommodate a footpath or shared/pedestrian lane if it is five metres wide.

Reduce traffic light discrimination against pedestrians

Canberra's traffic light programming promotes congestion, by encouraging Canberrans to drive rather than walk.

It typically takes one traffic light sequence to drive across Northbourne Avenue in Civic, but two traffic light sequences to walk, because the two stages of the crossing are not synchronised for pedestrians.

A person turning right from Northbourne Avenue Downer into Mouat St Lyneham faces a typical delay of 48 seconds if they drive, and 157 seconds if they walk.

The person who chooses to walk is penalised by almost two minutes.

Several factors contribute to the additional and unnecessary time penalties that pedestrians experience at traffic lights.

- pedestrian lights do not actuate as part of the normal sequence, but only if the pedestrian button is pushed. Conversely, pushing the pedestrian button automatically actuates the green light for cars;
- traffic light sensors automatically detect the presence of cars; pedestrians are not detected until they manually press a button;
- pedestrian crossings are often synchronised with other traffic lights at some distance along the road; they often remain red for a period after the pedestrian button has been pressed, even when there are no approaching cars;
- in some cases (now rare in Canberra), pedestrian light sequences include an unnecessary delay after the button is pushed;
- if the pedestrian button is pressed an instant after the main lights go green, the pedestrian light remains red for an entire cycle, even when the cars' green sequence is extended due to heavy traffic and there is plenty of time for a pedestrian sequence;

- pedestrian lights remain red during periods when it is perfectly safe to cross to the centre island (e.g. when cars on the right are stopped, to allow cars from the left to turn in front of them), or from the centre island to the other side of the road (e.g. when cars from the left are stopped to allow cars from the right to turn in front of them);

- there are missed opportunities to optimise the traffic light sequence for pedestrians. Many of Canberra's traffic lights have been redesigned to reduce delays for cars turning right. There are similar opportunities to reduce pedestrian delays. It may be possible to optimise pedestrian traffic lights for either clockwise or anticlockwise travel, and/or to provide signs indicating which direction will result in less delay.

Poorly programmed pedestrian lights are a road safety problem, as they encourage people to ignore them.