NSW Legislative Assembly Standing Committee on Public Works
Inquiry into Energy Consumption in Residential Buildings
August 2003

Submission from the Australian Conservation Foundation

Introduction

The Australian Conservation Foundation (ACF) is an independent, not-for-profit organisation with around 60 000 members and supporters. While many people associate ACF's work with the protection of Australia's flora and fauna, the ACF also acts to preserve the quality of life we enjoy in our cities.

There is now near universal global consensus on the link between greenhouse pollution and climate change. The Intergovernmental Panel on Climate Change (IPCC), the world's leading body on climate change, has concluded that global carbon dioxide emissions must be reduced by at least 70% over the next 100 years to stabilise atmospheric carbon dioxide concentrations at 450 parts per million – a figure which is still 60% higher than pre-industrial levels[1].

The Australian Conservation Foundation believes that we should be striving toward zero greenhouse gas emissions by 2050.

This means we should be working toward greenhouse neutral cities with effective policies to reduce the generation of greenhouse gas pollution by addressing both energy supply and demand. New South Wales' contribution to Australia's greenhouse gas pollution from residential use is the highest of any state and continues to increase. In terms of demand, residential buildings contribute around one third of NSW greenhouse gas pollution from electricity.[2]

We urge the New South Wales Government to demonstrate leadership by implementing effective policies to address energy efficiency in the residential sector and to encourage clean renewable energy supply at the local and state level.

Priority Actions should include:

1. Mandatory 5 star energy efficiency requirements and solar hot water for all new residential buildings and major renovations including high rise apartments.

2. Mandatory disclosure of the energy efficiency and greenhouse performance of residences on energy bills and at point of sale and point of lease.

3. Introduce a differentiated domestic energy pricing strategy to provide a disincentive for electricity demand above average needs.

4. Provide residents with the option of abating their greenhouse gas emissions by paying for trees to be planted at a similar cost to the excess energy charges from the differentiated pricing strategy.

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[1] Brown,L; *State of the World 2003*, Worldwatch Institute, New York 2003 p. 87
[2] Australian Greenhouse Office
http://www.greenhouse.gov.au/coolcommunities/strategic/chapter2.html#Trends by state
Electricity Supply Association of Australia; Electricity Australia 2003.

5. Enable residents to reduce their greenhouse gas pollution through a retrofitting scheme to improve the energy efficiency of existing homes and assist residents in avoiding charges from excess energy use.

6. Support community programs that enable residents to take action on their greenhouse pollution at the neighbourhood level.

7. Introduce incentives and remove disincentives for landlords to improve the energy performance of their rental properties.

8. Improve the energy efficiency of public housing and assist pensioners and low income households in accessing the benefits of energy efficient homes.

9. Invest in neighbourhood scale generation of solar electricity.

10. Provide incentives for residences and neighbourhoods to become net generators of solar electricity and to sell this to the electricity grid.

11. Amend the planning scheme to provide priority processing and solar access planning protection for active solar collecting devices and homes that achieve a high level of energy efficiency due to passive solar design.

12. Implement strategic plans for urban centres which take into account the greenhouse implications of transport and electricity grid infrastructure regarding the location of new residential developments.

13. Ensure that similar measures are implemented to address the greenhouse pollution generated by the energy demands of the commercial building sector.

14. It is crucial that demand side greenhouse abatement measures are complemented by leadership in sustainable energy supply. Investment in major works for energy infrastructure should be directed to clean renewable energy rather than greenhouse polluting fossil fuels.

Greenhouse Pollution and Climate Change

Per capita, Australia is the highest emitter of greenhouse gas pollution of any other nation in the OECD. Australia's profligate use of fossil fuel energy led the Australian government to plead a special case in international negotiations on the Kyoto Protocol of the United Nations Framework Convention on Climate Change. While the relative success of these pleadings has bought Australia some time through a generous emissions target and special concessions, Australia's emissions are continuing to rise. There is as yet little evidence that sufficient measures have been put in place to slow the growth of emissions in Australia to levels that can cost-effectively be achieved.

This is of particular concern in the post-Kyoto period, ie post 2013, when Australia is likely to particularly hard hit by the tougher measures needed to achieve the global 70-80% reduction in greenhouse gas emissions by 2050 required to stabilise the global climate. This is particularly important for Australia, as global climate change will, according to recent CSIRO and IPCC research, affect Australia badly, possibly worse than any other developed country[3].

[3] Karoly D., Risbey J. and Reynolds A. (2003) *Global warming contributes to Australia's worst drought* World Wide Fund for Nature: Sydney

Therefore it is crucial that maximum effort is made now, in the pre-2013 period, to reduce emissions.

New South Wales generates more greenhouse gas pollution due to residential energy consumption than any other state and is second only to Victoria in its per capita contribution to Australia's greenhouse pollution. The high level of emissions in NSW reflects a high reliance on electricity generated from coal, and the high level of electric space heating (as demonstrated by the fact that NSW residential electricity demand peaks in winter).[4]

New South Wales is also vulnerable to the economic, social, and environmental impacts of climate change such as more frequent and severe drought and bushfires. The Bureau of Meteorology has recently reported that the 2003 drought is the first time drought conditions have been demonstrably connected to the effects of climate change.[5]

New South Wales enjoys a mild climate and an abundance of sunshine which means it is well positioned to take advantage of the opportunities that an energy secure future presents. We urge the New South Wales Government to take action to address this situation and become a leader in greenhouse gas abatement. Courageous targets must be set – and pursued – to ensure the New South Wales does not continue its disproportionate contribution to global climate change.

Energy Supply Trends

Electricity generation, and hence its subsequent use, is the largest source of greenhouse gas emissions in Australia. Therefore reduction in electricity use, either through energy conservation, or through the substitution of fossil fuel electricity by clean renewable energy, is an essential element of greenhouse gas reductions and therefore of environmental sustainability.

Australia has amongst the lowest residential electricity prices in the world. Around 44% of all primary energy is used to generate electricity. By far most of this electricity is generated from coal which is the most greenhouse intensive fuel source. The residential consumption of electricity accounts for around 27% of total electricity consumption which has rapidly increased by nearly 80% from 1980 – 2000. [6] These trends point to massive projected increases in greenhouse gas pollution from electricity use in the residential sector.

According to the latest report from the Electricity Supply Association of Australia, NSW, Queensland and Victoria together account for 79 percent of electricity consumption in Australia. Furthermore the modelling undertaken for ESAA suggests that, on a 'business as usual' basis, national electricity consumption will rise another 25,000 GWh to more than 206,000 GWh by 2008 - with 80 percent of this growth occurring in three States (NSW, Victoria and Queensland).

The Electricity Supply Association of Australia has recently reported that demand for electricity in New South Wales, Victoria and Queensland is set to outpace supply. If New South Wales follows the business as usual scenario, major investment will be needed in costly and unsustainable energy infrastructure.

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[4] http://www.greenhouse.gov.au/coolcommunities/strategic/chapter2.html#Trends by state based on energy data from Bush et al, 1997

[5] Karoly D., Risbey J. and Reynolds A. (2003) *Global warming contributes to Australia's worst drought* World Wide Fund for Nature: Sydney

[6] Electricity Supply Association of Australia; *Australian Electricity Supply Development 2000-2002*, September 2002.

On the other hand, energy efficiency is a major economic opportunity. Numerous economic studies have shown that energy efficiency measures have the potential to improve productivity, stimulate innovation, reduce greenhouse gas emissions, contribute to GDP, and provide financial savings for energy consumers.

A national study presented by Young (2003)[7] and conducted by the Sustainable Energy Authority of Victoria (SEAV) and the Allen Consulting Group[8] (in press) on behalf of the Energy Efficiency and Greenhouse Working Group has conservatively estimated that if all economically beneficial energy efficiency measures were exploited by 2012:

- GDP would be $3.4 billion higher (0.4%) than would otherwise have been the case
- Consumption would be around $1.9 billion higher (0.4%)
- Employment would be around 11,000 people more (0.1%)
- Greenhouse gas emissions would be 53 Mt lower (11%)
- Energy use would be around 320 PJ lower (15% of stationary energy consumption)

Young (2003) presented low and high scenario potentials for:

- Residential energy efficiency
- Commercial energy efficiency by application
- Industrial energy efficiency by sector

Energy efficiency is a major economic opportunity and should be a high priority measure for greenhouse abatement in the short to medium term. New South Wales should aim to capture the full economic benefits of energy efficiency opportunities as quickly as possible. Accordingly, New South Wales should ***set itself a target of reducing energy use by at least 15% by 2012 through the application of energy efficiency measures.***

Priority Actions for the Residential Sector

In the context of an overall target of zero greenhouse gas emissions by 2050, ACF proposes the following as the priority policies for greenhouse gas abatement from residential energy consumption in New South Wales:

1. Mandatory 5 star energy efficiency requirements and solar hot water for all new residential buildings and major renovations including high rise apartments.

The Building Codes Board of Australia recently introduced energy efficiency standards for all new residential buildings.

The Victorian Government has announced that from July 2005, compliance with new residential energy standards will require:

- 5 Star energy rating for building fabric plus water saving measures; and
- a rain water tank; or a solar hot water service

We urge New South Wales to implement similar or higher standards.

[7] Young, D. (2003) *Towards a National Framework for Energy Efficiency* Presentation to the 2003 conference of the Business Council for Sustainable Energy
[8] Allen Consulting Group (2003) *Assessing the Relative Efficiency and Cost Effectiveness of a Stationary Energy Emissions Intensity Requirement* Final report to the CoAG Energy Market Review

2. Mandatory disclosure of the energy efficiency and greenhouse performance of residences on energy bills and at point of sale and point of lease.

For some time the ACT Government has required disclosure of energy efficiency ratings whenever a house is sold.

It should be mandatory for landlords to get their rental properties audited for energy efficiency. Disclosure should be mandatory as a condition of all new tenancy contracts so that tenants can make informed decisions about the energy efficiency of their homes.

3. Introduce a differentiated domestic energy pricing strategy to provide a disincentive for electricity demand above average needs.

Australian residential electricity prices are amongst the lowest in the OECD. These prices do not reflect the real cost of using this form of greenhouse intensive energy. Pricing needs to reflect the true costs of greenhouse pollution balanced with the need to provide energy services for lighting, heating and cooking.

Excessive energy use should be priced as luxury to provide a disincentive for energy use above reasonable needs.

4. Provide residents with the option of abating their greenhouse gas emissions by paying for trees to be planted at a similar cost to the excess energy charges from the differentiated pricing strategy.

Residents should be empowered to take action to neutralise their greenhouse gas emissions. Many people would rather see their money go to positive measures such as tree planting if they are to pay higher prices for excess electricity. This approach has been tested with tree planting greenhouse abatement for motor vehicle fleets.

5. Enable residents to reduce their greenhouse gas pollution through a retrofitting scheme to improve the energy efficiency of existing homes and assist residents in avoiding charges from excess energy use.

The New South Wales building regulations should set mandatory 5 star performance standards for the energy efficiency of major renovations. This should be coupled with rebates and incentives for retrofitting homes for improved energy efficiency.

6. Support community programs that enable residents to take action on their greenhouse pollution at the neighbourhood level.

The people element in greenhouse abatement should not be ignored. There are a number of community initiatives such as *Cool Communities*, *Sustainability Street*, *The Sustainable Schools Program*, as well as local government programs which raise awareness and support behavioural change towards sustainable living.

7. Introduce incentives and remove disincentives for landlords to improve the energy performance of their rental properties.

Landlords should not be allowed to rent out houses that have extremely poor standards of energy efficiency and which cost their tenants a fortune in energy bills. There should be some basic minimum standards.

Coupled with this there should be an examination of the incentive mechanisms available to encourage landlords to improve the energy performance of the houses they own. For example, there is a disincentive for landlords to spend money on improved environmental performance because maintenance is tax deductible but home improvements are not.

8. Improve the energy efficiency of public housing and assist pensioners and low income households in accessing the benefits of energy efficient homes.

The State government has control over the significant quantity of public housing stock in New South Wales. Minimum performance standards for the energy efficiency of public housing should be set and a program of implementation of the standards should be rolled out across the state.

9. Invest in neighbourhood scale generation of solar electricity.

Residential buildings have the capacity to produce as well as consume electricity. Localised electricity generation has the potential to significantly ease demand on infrastructure in terms of generation as well as transmission infrastructure.

Neighbourhood, or precinct approaches to renewable energy generation has benefits of community ownership of greenhouse abatement solutions while at the same time pooling resources. High profile demonstration projects such as the solar panels on the Queen Victoria Market in Melbourne can increase the awareness and acceptance of such approaches.

10. Provide incentives for residences and neighbourhoods to become net generators of solar electricity and to sell this to the electricity grid.

Sustainable neighbourhoods should be encouraged to generate excess renewable energy and to champion energy efficiency within the larger urban context.

11. Amend the planning scheme to provide priority processing and solar access planning protection for active solar collecting devices and homes that achieve a high level of energy efficiency due to passive solar design.

Energy efficient buildings should not be considered in isolation from planning considerations including relationship to surrounding buildings and transport infrastructure as these often have considerable greenhouse implications.

12. Implement strategic plans for urban centres which take into account the greenhouse implications of transport and electricity grid infrastructure regarding the location of new residential developments.

There is an ongoing need for both regulations as well as government-funded programs to address greenhouse abatement in the residential sector. Rebates and financial support for energy efficiency and greenhouse abatement measures should be funded through an increase in coal royalties.

Commercial Building

13. Ensure that similar measures are implemented to address the greenhouse pollution generated by the energy demands of the commercial building sector.

Greenhouse pollution from the commercial building sector is to nearly double their 1990 levels by 2010.

There should be mandatory disclosure of the energy efficiency rating of new and existing commercial buildings at the point of lease and the point of sale.

Government procurement policies should ensure that all new government office buildings and all leased office space meets a high ABGRS rating.

Building regulations should be amended to require new commercial buildings to meet minimum standards of energy efficiency.

Part of the increase in greenhouse pollution from commercial buildings has been driven by the new energy demands of the information age. The Government should revisit its procurement policy to ensure computers and other electrical appliances are the maximum star rating available to that product (or in the case of computers are "energy star" compliant and enabled.)

Energy Supply

14. Investment in major works for energy infrastructure should be directed to clean renewable energy rather than greenhouse polluting fossil fuels.

It is crucial that demand side greenhouse abatement measures are complemented by leadership in sustainable energy supply.

New South Wales, Victoria and Queensland are expected to account for some $10 billion worth of new investment in generation capacity, high voltage transmission lines and lower voltage systems in the next five years, with 60 percent of the capital outlays going on upgrading urban distribution systems.[9]

Nationally we should be aiming for a renewable energy (excluding large scale hydropower) target of 10% by 2010 and 20% by 2020.

The New South Wales government should do more than call on the Federal government to increase MRET, it should show leadership at the state level because the impacts of climate change will be felt at the state level.

Enforceable retailer licence obligations are one regulatory mechanism the government could use to ensure that renewable energy targets are achieved.

Conclusion

The arguments for taking action on energy efficiency and clean renewable energy sources are compelling on environmental, economic and social grounds.

The Australian Conservation Foundation strongly recommends that immediate action be taken to address New South Wales' disproportionate contribution to global climate change before it is too late.

References

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