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December 2011

Barriers to Effective Climate Change Adaptation
Productivity Commission
LB2 Collins Street East
Melbourne Vic 8003

Dear Sir/Madam

Re: ACF submission to the Productivity Commission Inquiry into Barriers to Effective Climate Change Adaptation

The Australian Conservation Foundation (ACF) welcomes the opportunity to submit its views on the identification and removal of the barriers to effective climate change adaption.

Ensuring that Australians understand, recognise and effectively respond as a nation to the impacts and threats of climate change has been a critical element of ACF's work for many years. For example, putting a price on carbon to mitigate the effects of climate change has been and remains a key campaign priority.

But as the world moves to reduce climate pollution, the need for communities to adapt to the effects of a changing climate has become imperative.

This ACF submission outlines what action we believe Australia must take in adapting to climate change, what barriers currently - and in the future - may hamper that adaptation, and how such barriers can be prevented or overcome.

Please contact Dr Paul Sinclair at p.sinclair@acfonline.org.au or on 0409 004 651 to discuss issues raised in our submission.

Yours sincerely,

Denise Boyd
Campaigns Director

December 2011

ACF submission to the Productivity Commission Inquiry into Barriers to Effective Climate Change Adaptation

Introduction

Australia's Climate Commission is blunt in its assessment of the current state of the world's climate and its implications for Australia's immediate future. The world is warming and human emissions of greenhouse gases are the primary cause. The impacts of climate change are already being felt in Australia and around the world with less than 1 degree of warming globally. Without significant reductions in pollution the Earth is tracking for a 2 degree rise in temperature by 2050.[1]

Two of the biggest challenges facing governments, business and communities from climate change are:

1. Taking action to halt and reverse the levels of pollution being emitted into the atmosphere; and
2. Effectively responding to the impacts of an already changing climate to maintain the ecological foundations of life and human wellbeing.

The National Climate Change Adaptation Research Facility recommends that effective adaptation and pollution mitigation be undertaken in parallel streams. Mitigation involves actions that are intended to reduce the magnitude of our contribution to climate change. It includes strategies to reduce greenhouse gas sources and emissions and enhance greenhouse gas sinks. Adaptation consists of actions undertaken to reduce the adverse consequences of climate change, as well as to harness any beneficial opportunities. Adaptation actions aim to reduce the impacts of climate stresses on human and natural systems. Both types of responses are essential and complementary.[2]

This submission addresses the second of these challenges and responds to the Productivity Commission's terms of reference for the inquiry into regulatory and policy barriers to effective climate change adaptation.

[1] Climate Commission, *The Critical Decade: Climate science, risks and responses*, Commonwealth of Australia, Canberra, 2011, p.60.

[2] NCCARF, http://www.nccarf.edu.au/climate-change-adaptation

Summary of recommendations

Sustainability Reform to support climate mitigation and adaptation

- Australia lacks a coherent, integrated national approach to solving environmental challenges such as the impacts of climate change. Reform is required to realign decision making in support of a clear sustainability targets and adaptation action for Australia.

Ecosystem based adaptation

- National leadership and coordination of adaptation plans and action is required across a range of areas constraining Australia's effective response to climate change
- Value the benefits of ecosystem adaptation and establish National Environmental Accounts to measure adaptation progress
- Resource ecosystem adaptation by removing tax incentives promoting pollution
- Fully implement existing environmental and economic reform to support ecosystem adaptation
- Undertake a comprehensive economic and environmental assessment of cost effective and ecosystem based adaptation opportunities

Ocean and coastal management

- Establish an Intergovernmental Agreement on Coasts and Oceans to drive legislative and institutional reform of oceans and coastal planning , protection and management
- Resource and implement a National Coastal Policy

Sustainable Cities

- Fast-track energy efficiency standards in new and renovated homes
- Improve incentives for low income homes to invest in insulation and other energy efficiency measures
- Increase accessibility for low income households to participate in insulation and other energy and water efficiency measures
- Capture adaptation benefits from commercial buildings
- Overcome behaviour and cultural barriers through targeted behaviour change programs

Priorities for climate adaptation action

There are four priorities for reform to improve the effectiveness of Australia's adaptation to climate change:

1. Sustainability reform. Implementation of measures to realign federal government decision making in support of a clear sustainability targets and adaptation actions for Australia
2. Ecosystem based adaptation. Assessment and implementation of ecosystem based approaches to climate adaptation
3. Ocean and coastal planning, protection and management
4. Creation of Sustainable Cities

Sustainability Reform

Australia lacks a coherent, integrated national approach to solving environmental challenges such as the impacts of climate change on communities and ecosystems.

Reform is required to realign decision making in support of clear sustainability targets and adaptation action for Australia. These reforms should include:

- Amending the Intergovernmental Agreement on Federal Financial Relations to incorporate sustainability criteria for specific purpose payments and partnership payments, and establish clear accountability for States to deliver on sustainability performance targets that include climate adaptation measures.

- Revising the terms of reference for the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) to include sustainability and expand its membership to include people with environmental expertise.

- Requiring the Auditor-General to undertake periodic reviews of how government agencies are incorporating the national sustainability goals into their own decision-making.

- Changing the Productivity Commission to a Productivity and Sustainability Commission. A strengthened Productivity and Sustainability Commission should serve as the key government advisory body concerned with the intersection of economic, social and environmental policy.

In addition the Government should:

- Amend the *Productivity Commission Act* to rename the Commission and change its mandate to include "create a productive and ecologically sustainable economy" and add expertise on ecological economics including natural resource flow models and other credible methods of modelling economic and environmental changes;

- Require the Commission to issue an annual "Green Report", assessing the overall ecological impact of Commonwealth policies, including Commonwealth-State financial transfers, and progress towards the achievement of national sustainability goals;
- Require the Commission to provide advice to the Government on Australia's current and possible future ecological footprint, taking into account population and demographic trends, consumption trends, and macroeconomic developments; and
- Initiate a project to fully evaluate the components of economic value generated by Australia's natural resources and ecosystems.

Ecosystem based adaptation

National leadership and coordination of adaptation plans and action is required across a range of areas that are constraining Australia's effective response to climate change

Even in the absence of climate change, the loss of biodiversity that Australia has experienced in the last two centuries is massive by international standards. Land use change and the introduction of exotic species have led to the extinction of over a hundred species of plants and animals, in addition to the dramatic reductions in the distribution of many species. Globally, two thirds of the mammals that have become extinct since the 1600s are Australian. Despite some recent positive outcomes in threat abatement, recent national assessments of the condition and trend of biodiversity in Australia indicate that it is in more peril than ever.

Climate change introduces new uncertainties for Australia's species, such as changes in species distribution and abundance, evolution of interactions between species, changes in ecosystem processes, dynamics of changes and changing threats (e.g., exotic species introduction, altered fire regimes, land use change and altered hydrology) [3]. Some effects are already observable, such as:

- Eight major coral bleaching events, unknown prior to 1979, have badly affected Australia's coral reefs
- Fire regimes are changing in line with expected climate changes, particularly in SE Australia
- Alterations in species' genetic constitution, geographic ranges, life cycles, populations and growth rates

Of greatest concern are national and international assessments that indicate that Australian biodiversity loss to date may be moderate in relation to predicted losses in coming decades. In late 2009 a report commissioned by the Commonwealth Department of Climate Change, *Australia's Biodiversity and Climate Change* concluded that Australia is "pushing the limits of our natural life support system. Our environment has suffered low

3 Dunlop M and Brown PR (2008). *Implications of climate change for Australia's National Reserve System: A preliminary assessment*, Report to the Department of Climate Change, February, 2008.

levels of capital reinvestment for decades. We must renew public and private investment in this capital".[4]

Australia's Biodiversity and Climate Change recommended the following key areas of reform to support the adaptation of Australia's environment to climate change:

- Reform our management of biodiversity. Adapt management of biodiversity to meet existing and new threats – some existing policy and management tools remain effective, others need a major rethink, and new approaches need to be developed in order to enhance the resilience of our ecosystems.
- Strengthen the national commitment to conserve Australia's biodiversity. Climate change has radical implications for how we think about conservation. We need wide public discussion to agree on a new national vision for Australia's biodiversity, and on the resources and institutions needed to implement it.
- Invest in Australia's life support system. Australia is pushing the limits of our natural life support system. The environment has suffered low levels of capital reinvestment for decades. Substantial increases in public and private investment to protect and renew this capital are required.
- Build innovative and flexible governance systems. Current governance arrangements for conserving biodiversity are not designed to deal with the challenges of climate change. Agile and innovative structures and approaches are required.
- Meet the mitigation challenge. Australia's biodiversity has only so much capacity to adapt to climate change, and its limit is being approached. Therefore, strong emissions mitigation action globally and in Australia is vital – but this must be carried out in ways that deliver both adaptation and mitigation benefits.[5]

Value the benefits of ecosystem adaptation

Ecosystem-based adaptation approaches to climate change offer multiple, but often poorly quantified benefits to the economy and society. According to the World Bank an essential component of adaptation is the protection and restoration of ecosystems and the habitats, natural resources and services they provide. "The multiple benefits in terms of goods and services afforded by biodiversity and healthy ecosystems are largely unrecognised and unrecorded in natural accounting"[6].

Natural ecosystems are resistant and resilient and provide a full range of goods and ecosystem services upon which human livelihoods depend. For example, human health

4 Steffan, W. (et al), Australia's Biodiversity and Climate Change: Summary for Policy makers 2009, Australian Government, Department of Climate Change, Canberra, 2009, p.2.

5 Steffan, W. (et al), *Biodiversity and Climate Change. Summary for Decision Makers*, http://www.climatechange.gov.au/~/media/publications/biodiversity/biodiversity-summary-policy-makers.ashx

6 World Bank, *Convenient Solutions to an Inconvenient Trust: Ecosystem-based Approaches to Climate Change*, June 2009, p. 47 http://siteresources.worldbank.org/ENVIRONMENT/Resources/ESW_EcosystemBasedApp.pdf

and ecosystem health are closely linked. By dismantling ecosystems and eroding their capacity to deliver services such as clean air, water and food, climate change is a major threat to human health.[7]

Australia's National Rural Health Alliance has consistently drawn attention to threats posed by climate change on the health of rural and regional communities. In November 2011 the NRHA stated that "global climate change induced by human activity is increasing the incidence of severe weather events (including heatwaves) and changing the distribution of diseases that are related to environmental factors. At the global level, as well as within rural Australia, climate change will lead to significant population displacement and put increasing pressure on already overburdened health services and infrastructure".[8]

Natural ecosystems provide proven and cost-effective protection against some of the threats that result from climate change. For example, the removal of infrastructure barriers to enable the migration of saltmarshes and mangroves inland under attack from rising sea levels enhances blue carbon storage, fish habitat and other ecosystems services provided by the estuary. However, actions taken to adapt to climate change in catchment areas, such as dams, can severely affect downstream users and estuaries through reduced or altered hydrological regimes. Ecosystem-based adaptation can complement or be a cost effective substitute for expensive and damaging infrastructure responses to climate adaptation.

The federal government should require the Office of Best Practice Regulation (OBPR) to revise its Best Practice Regulation Handbook to ensure that ecological issues are properly evaluated in regulatory cost-benefit analysis. The Handbook should reflect current OECD best practice including how policy makers conducting cost-benefit analyses should address resource depletion, ecosystem values, discount rates for long-term ecological changes, and non-financial valuation methods.

Establish National Environmental Accounts to measure adaptation progress

In addition the federal government should ensure information about Australia's environment is integrated into Australia's national accounts so that it drives government decision making. The Australian Government should:

- Boost resourcing of the National Plan for Environmental Information to deliver a set of national environmental accounts;
- Issue the Intergenerational Report on a biannual basis and include detailed independent analysis of progress towards or away from the national sustainability and adaptation goals set;

[7] Costello, A., "Managing the Health Effects of Climate Change", *Lancet*, Vol. 373, 16 May 2009, pp. 1693-1733
[8] NRHA, "Health risks of global climate change", Media Release, 30/11/2011.
http://nrha.ruralhealth.org.au/cms/uploads/mediareleases/mr-30-11-11.pdf

- Issue the Australian Bureau of Statistics 'Measuring Australia's Progress' report quarterly, in alignment with the national accounts data; and
- Respond to the recommendations of the Commission on the Measurement of Economic Performance and Social Progress, including advice on how Australia's national accounts should be changed to incorporate natural assets.

These reforms would provide the knowledge foundations necessary for the development, implementation and evaluation of effective regulatory and market-based adaptation action.

Resource ecosystem adaptation by removing tax incentives promoting pollution

There is a growing recognition of the importance of tax design for our ecological future. Indeed, the Australia's Future Tax System (AFTS) Review – the most significant review of tax in Australia this generation – included numerous reform proposals aimed at aligning tax and pricing policies with sustainability principles.

Further, at the September 2009 meeting of the G20, member states (including Australia) committed to "phase out and rationalise over the medium term fossil fuel subsidies", a term which encompasses tax expenditures that encourage fossil fuel production and use.

One specific tax policy that has important consequences for patterns of resource use, economic efficiency and the federal budget is the accelerated depreciation for investment in oil and gas assets (specifically, for the categories of oil and gas assets provided in section 40-102(5) of the Income Tax Assessment Act 1997 (Cth).) This policy has little economic justification and stands to cost the Australian taxpayer $1.65 - $2.05 billion annually by 2018, while perpetuating a pattern of investment and economic development that is overly skewed towards fossil fuel-intensive industries.

Fully implementing existing environmental and economic reform will support ecosystem adaptation

The effectiveness of Australia's adaptation response would be improved by fully implementing economic and environmental reforms already agreed by state and federal governments.

For example, future resilience of state managed natural forest ecosystems will be enhanced by further transitioning timber production to well managed plantation and agro-forestry. The main impediment to that transition has been under pricing of timber by State forestry agencies and a resistance to apply full cost attribution to pricing structures and for the agencies themselves to be restructured to fully comply with obligations of National Competition Policy (NCP) reforms. Reform of forest industry pricing, competitive neutrality and structure are long overdue and should be fully applied to State Forestry Agencies.

The federal government describes its $12.9 billion Water for the Future program as "the single largest investment in climate change adaptation".[9] The water purchase of water entitlements for environmental purposes in the Murray-Darling Basin are a key part of this program and will provide substantial adaptation benefits by restoring ecosystem resilience to climate change and maintaining critical refuge during drought. However, the water purchase program is currently under significant threat and the federal government and Murray-Darling Basin Authority is placing greater emphasis on providing subsidies to irrigation infrastructure operators to build new, or reconfigure old irrigation infrastructure. Water infrastructure is extremely vulnerable to being impacted by climate change.

A CSIRO review of the draft Murray-Darling Basin Plan concluded that the Murray-Darling Basin Authority had not modelled the likely impacts of climate change on water availability in setting its draft limits on water diversions from the river system. This will mean that the environment will be impacted hardest from reductions in water availability predicted under climate change. This will represent a substantial policy failure.[10]

Undertake a comprehensive economic and environmental assessment of cost effective and ecosystem based adaptation opportunities

Australian government agencies and its scientific community have indicated an understanding of the threat of climate change to ecosystems and biodiversity and a commitment to take action. Numerous recent papers and articles highlight the magnitude of the biodiversity challenge in Australia. The National Climate Change Adaptation Research Facility is aggregating and funding new research to support adaptation of terrestrial, marine and freshwater biodiversity, among other topics.

In 2002 Australia and other signatories to the international Convention on Biological Diversity adopted the 2010 biodiversity target to significantly reduce the rate of biodiversity loss at global, regional and national levels. And in a recent position paper[11], the Australian Government has identified "natural systems of national significance" as one of five national priorities for adaptation action.

There seems to be widespread agreement of the dangers of climate change to Australia's natural life support systems, and that unprecedented action is required to restore the resilience of Australia's ecosystems and their capacity to draw down and store greenhouse gas pollution, supply clean water and other vital environmental services.

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[9] http://climatechange.gov.au/government/adapt.aspx

[10] http://www.csiro.au/Organisation-Structure/Flagships/Water-for-a-Healthy-Country-Flagship/Sustainable-Yields-Projects/~/media/266E12E135614B0098370F95056F9F7E.ashx

11 *Adapting to Climate Change in Australia. Position Paper*. Australian Government, Department of Climate Change, Canberra, 2010

However, more needs to be done to identify appropriate adaptation options and build ecosystem resilience as a fundamental component of Australia's response to the climate crisis. A clear 'business case' will help the federal government shore up the required support and mobilise sufficient resources.

The federal government should lead a comprehensive assessment of the threats of climate change to ecosystems, and the environmental services they provide to the wellbeing of Australians.

A systematic methodology for completing this assessment would include a) putting a 'price-tag' on the climate risk from the loss of environmental services provided by ecosystems to the economy and community wellbeing now and in the future, b) identifying and prioritising an actionable portfolio of adaptation measures to ensure time and resources are focused for maximum benefit environmental and economic benefit, and c) mapping out a concrete implementation roadmap and investment plan.

This assessment would underpin the development of a coherent strategy to mobilise the considerable resources required to secure its wealth of diverse ecosystems in the face of climate change.

Ocean and coastal management

Threats to Australia's coasts are high, capacity to adapt is low

In December 2011 the Australian State of the Environment Report concluded that recent "research comparing Australian coastal governance with examples elsewhere in the world has concluded that, in many parts of Australia, the ability to adapt to emerging pressures, especially climate change, is low and declining"[12].

Ocean and coastal management must be a priority area for adaptation reform. With 85 per cent of a growing Australian population living within 50 kilometres of the coast, there will be increasing pressure on coastal environments and reduced ability to adapt as our coast is placed under increasing pressure by rising sea levels and development.

The 2011 State of the Environment report (released in December 2011) makes a very strong case for the need to reform oceans and coastal governance arrangements:

> There is limited federal leadership in the implementation of an effective national system for management of coastal marine ecosystems and biodiversity, and their protection from persistent and emerging threats. There is continued loss of biodiversity, duplication of effort, inefficiencies, an

[12] Australian Government, *Australia State of the Environment*, Independent report to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities, 2011, "In brief", http://www.environment.gov.au/soe/2011/summary/index.html, p.51.

> overall lack of effectiveness, and distrust among the sectors, the various jurisdictions and the community. A vertically and horizontally integrated national system for marine conservation and management is widely seen as a critical gap in management.[13]

> …the overpowering weight of opinion and evidence is that major steps need to be taken very soon to address governance arrangements for Australia's coasts. Without these reforms, there are high risks that uncoordinated and nonstrategic development will lead to continued degradation of environmental, social, economic and cultural assets of the coasts. This is likely to make coastal communities and ecosystems vulnerable to shocks and surprises that may be both highly undesirable and irreversible.[14]

Establish an Intergovernmental Agreement on Coasts and Oceans

The federal government should demonstrate national leadership by entering into an Intergovernmental Agreement on Coasts and Oceans with the state, Northern Territory and local governments. This would drive reform in legislative (coastal act and an oceans act), institutional reform (nation coastal agency and an Oceans Commission) policy and management. It would commit all governments to setting long-term goals to deliver integrated and regional ecosystem-based ocean, coast and catchment planning, protection and management. The agreement would establish the funding mechanisms to ensure that coordinated national action is delivered across key areas of ocean and coastal planning, protection and management such as responses to climate change, integration across jurisdictions and industry sectors, national infrastructure support, policy implementation, expanded scientific research, community capacity building, vulnerability assessment, valuation of ecosystem services, land capability research, incentives for collaboration, water quality improvement, land-based sources of pollution, the buyback of coastal land and protection and retreat strategies.

The intergovernmental agreement should also be used to drive a partnership between the federal government and local government on coastal planning and management. Local government is at the forefront of coastal planning and management. Councils manage extensive areas of coastal foreshore, the development and oversight of strategic and statutory plans for coastal settlements, rural areas and catchments, and provide water, drainage, sewerage, waste removal and treatment services. They are bearing the brunt of the impacts of 'sea change' and climate change on the coast's social and environmental assets.

The partnership should recognise local government's key role and deliver local responses to the impacts of population growth and climate change, invest in public assets and infrastructure and address the planning for sea-change population and development shifts. This should also facilitate regional management integration, cooperation and collaboration across local government boundaries, between local and state government

[13] *Australia State of the Environment* 2011, "In brief", p. 31.
[14] *Australia State of the Environment*, 2011, p. 875.

jurisdictions, across state government portfolios, and with other regional bodies such as catchment management authorities.

Resource and implement a National Coastal Policy

The federal government has committed to develop a national coastal policy. The key elements of such a policy should include strategies that will build natural and social resilience along Australia's coast.

The National Coastal Policy will require statutory support (Coastal Zone Planning and Management Act) to deliver strengthened and integrated legislative, planning and management provisions across state, territory and Commonwealth jurisdictions. The Act would establish a National Coastal Advisory Council that would report to the Prime Minister on major coastal issues, and a National Coastal Agency to provide leadership, stewardship and performance monitoring, build capacity to integrate science, information and policy decision making in planning and management, and support the development of regional strategic plans and state of the coastal environment reporting.

Coastal planning and management must be adaptive and should also:

- address the risks and impacts from rising sea levels and increased storm activity on coastal settlements, supported and informed by a national settlement policy
- prevent development in areas at risk of inundation and other vulnerable coastal areas
- strengthen environmental assessment and approvals processes through improved and uniform State and Territory accreditation to a national best-practice standard
- consider ecosystem services and cumulative impacts when making development decisions
- State and federal governments should cooperate to identify the threats to the coast from climate change by preparing coastal protection and retreat strategies where adaptation strategies may prove inadequate

A key method of adapting to climate change is to take action to protect those habitats at risk from such change. For example, all governments should protect seagrasses meadows, mangroves and saltmarshes that are critical for delivering ecosystems services, fish habitats and carbon storage. Actions to achieve this include:

- minimising the impact of coastal development, sedimentation and pollution in estuaries where these habitats are found
- restoring these habitats where they have been damaged, establishing buffers between these habitats and human use, and including them in protected areas
- removing infrastructure that obstructs the inland extension of these habitats as they respond to sea level rises

- restoring drainage patterns in low-lying areas previously drained for agricultural use so that habitats can return to areas where they were once found
- paying landholders for protecting ecosystem services on their land
- ensuring ecosystem services are properly valued in decision-making.

Sustainable Cities

Climate change poses significant threats to the social fabric of our towns and cities and to our urban and strategic infrastructure. Climate change is likely to result in increased damage to buildings, energy, telecommunications, transport and water infrastructure and the services they provide.[15]

The National Climate Change Adaptation Research Plan for Settlements and Infrastructure has concluded that developing effective adaptation responses will be critical in reducing the impacts of climate change on settlements and infrastructure and, carefully designed and implemented, these responses could generate significant benefits such as increased energy or water efficiency.

Fast-track energy efficiency standards in new and renovated homes

Governments have agreed to introduce new energy saving standards for new homes of 6-star (out of 10). This is still low compared to standards in similar climates overseas. In the US, Canada and the UK, average building standards are 6.8–7.5 stars for similar climate zones to Australia.[16] These standards require better insulation and design, so that the number of days heaters and air-conditioners are needed to kept to a minimum.

Table 1. Housing standards comparison

Comparative climate zones		Average standard
Darwin	Florida	7-star
Brisbane	Texas	6-star
Dubbo	Arizona	7-star
Melbourne	California	7.6-star
Hobart	UK/Canada	7.2-star

Not only should Australia fast track towards 7 to 8-star standards for new homes and renovations by the end of 2012, if we want to keep up with international best practice, we also need to address the increasing size of houses and the direct energy use of lighting, heating, air-conditioning and hot water and commit towards zero carbon homes by 2020. The UK has committed to making all new homes zero net carbon by 2016 and Australia should commit to such a goal by 2020. ASBEC (Australian Sustainable Built Environment Council) working group on Zero Carbon Homes has made significant progress in developing an appropriate framework for achieving this.

[15] http://www.nccarf.edu.au/sites/default/files/NARP%20S&I%20Summary%20G.pdf

[16] Horne,R.E et al (2005) *International Comparison of Building Energy Performance Standards*, Centre for Design, RMIT for the Australian Greenhouse Office, Department of Environment and Heritage.

In creating climate safe homes and buildings, there is a substantial need to retrofit existing homes. A package of home audits linked to energy and water efficiency improvements could be focused initially on 3.5 million low-income households scaling up over time. Such a program could create 40,000 jobs and generate energy cost savings of $14 billion over seven years, with an investment of about $8.7 billion.[17] A KPMG report for the Brotherhood of St Laurence estimated a major housing retrofit program would cost $11.2 billion, equivalent to about $1.76 billion per year. For SMEs, a $250 million fund over five years would help ensure that efficiency opportunities for this sector are not missed. Existing homes should be upgraded to a minimum of 5 star NABERS rating by 2020.

To achieve these benefits the federal government should:

- Fast track towards 7 to 8-star standards for new homes and renovations by the end of 2012
- Commit to climate safe and zero carbon new homes by 2020
- Existing homes should be upgraded to a minimum of 5 star NABERS rating by 2020

Improve incentives for low income homes to invest in insulation and other energy efficiency measures

There is a significant opportunity to introduce greater incentives for landlords to invest in insulation and other energy efficiency measures.

ACF, ACOSS and CHOICE produced a report a few years ago entitled *Energy and Equity Preparing households for climate change: efficiency, equity and immediacy*[18] arguing that low income households will, on average, spend a greater proportion of their total weekly household budget on energy than wealthier households and are currently less able to invest in energy efficiency measures such as insulation, new hot water systems or energy efficient air conditioners. Furthermore energy consumption in low income households is partly shaped by the market in second-hand appliances which are often inefficient, waste energy and increase bills. Given that one in four households are in private rental or public housing, it is important to ensure that they also benefit from government interventions. Incentives are therefore needed for landlords to invest in insulation and other energy efficiency measures.

[17] KPMG, Brotherhood of St Laurence & ECOS, *A national energy efficiency program to assist low-income households*, September 2008, available at http://www.bsl.org.au/main.asp?PageId=6356. Figures are based on average assistance of $2,000 per household and an upper bound of $6,000.

[18] http://www.acfonline.org.au/uploads/res/equity.pdf cited on 16 December 2009

Increase accessibility for low income households to participate in insulation and other energy and water efficiency measures

The federal government should be promoting the introduction of greater incentives and support for renters to participate in energy and water efficiency programs.

One significant concern about a number of programs that have been offered by governments is that the programs are not easily accessible for low income and disadvantaged households. Almost all of these households are in the rental market rather than homeowners. A measure of the success for any energy efficiency program should be the number of homes in the private rental market, occupied by low income families, that are made more thermally efficient through for example installation of ceiling insulation, conversion towards solar hot water (or equivalent energy efficient hot water system).

Capture adaptation benefits from commercial buildings

The ClimateWorks modelling shows the substantial opportunities within the commercial sector including but not limited to retail, education, hotels and hospitals. A combination of incentives, regulations and education will be required to help to capture these opportunities.

In terms of evaluating the performance of buildings, the post-occupancy evaluation of commercial building standards is particularly important to delivering real outcomes in energy savings across the building sector. All too often energy use when the building is operating does not live up to the targeted energy efficiency in the design. Without post-occupancy evaluation, there is no feedback loop into the design professions to improve the delivery of energy efficient buildings across the board.

For new 'green' buildings - All new buildings should meet a minimum of 5-star NABERS requirements. The current Building Code of Australia minimum standards (based on a 3 to 3.5 stars on NABERS) for office buildings are inadequate; especially given the fact that new buildings will remain part of the existing building stock until at least 2050. Forward-looking and energy efficiency focused building code revisions would require new buildings to meet a minimum of 5-star NABERS requirements now. Such measures are simple and generally well-understood and as such provide a robust means of directing greater investment into energy efficient measures and practices. This would significantly improve the energy efficiency of new building stock and eliminate the need to retrofit them in the short- to medium-term upon revisions of the building code to more environmentally stringent standards. ACF welcomes mandatory disclosure as a way of making the market more transparent and helping provide incentives towards better performing buildings.

For existing building stock: Introduce additional policies and programs to retrofit existing building stock. In Australia, significant advances have been made in green design,

construction and energy efficient technologies in recent years, thanks largely to the efforts of industry stakeholders such as the Green Buildings Council of Australia. However a greater focus needs to be placed on the 98 per cent of commercial floor space that is existing building stock. A strategic approach to greening existing commercial buildings must involve retrofitting. However, barriers and impediments to the investment in 'green' retrofitting persist. Getting policy leverage will require providing unambiguous market signals as well as providing incentives for investing in modern technology. While accelerated depreciation will shorten the payback period by enabling owners/investors to defer tax payments (in exchange for implementing energy efficiency measures earlier) other policies and programs should also be introduced.

Zero Precinct Carbon Developments needed to be demonstrated: Examine a range of incentives for driving competition and innovation towards carbon neutral precincts in each of our capital cities. The concept of zero carbon precincts is taking off overseas and given that Australia developers are amongst the global thought leaders in driving innovation the government should give serious consideration to providing greater incentives to getting in place demonstration programs in each of our capital cities. A bit like tax-free hubs, these precincts could attract a concessional rate of tax and treatment and would drive successful innovation and competition if done right.

Overcome behaviour and cultural barriers through targeted behaviour change programs

Community-based energy efficiency behaviour change programs need to be <u>embedded</u> into the design and implementation of all relevant government initiatives in order to maximise the effectiveness, ownership and long term benefits of these policy initiatives. The uptake of energy efficiency measures at all levels has been disappointing due to what some economists term hidden "transition cost". This refers to an inertia reflecting both information asymmetries and behavioural indifference. Breaking through this inertia requires a "grand collaboration" of relevant stakeholders to create momentum for change. This response proposes the invention of "Energy Efficient Communities" to pilot municipal scale energy initiatives.

By engaging with decentralised power generators, government at a state and local council level, retrofit service providers, the union movement and neighbourhoods, it is envisaged that communities can be galvanised, one at a time, to reduce their energy/emissions footprint, and to become energy-independent through a combination of efficiency and distributed clean power generation.

Successful ingredients in delivery of a behaviour change program are based on the following recommendations:
1. The partnership approach should be embedded in programs
2. Programs and funding proposals need time
3. Invest resources, both time and money, in training that empowers local 'Champions'

4. Importance needs to be placed on storytelling for evaluation and participant mentoring
5. Programs should have a longer term vision for what will occur after the program finishes
6. Increase community capacity building to promote ongoing long term change
7. Consumption/production/purchasing and their environmental impacts should become key themes
8. Include content on social norming, routines and habits