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Submission by the
Australian Conservation Foundation

To the House of Representatives
Standing Committee on Environment and Heritage

INQUIRY INTO A SUSTAINABILITY CHARTER

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EXECUTIVE SUMMARY

This submission presents the Australian Conservation Foundation's (ACF) response to the House of Representatives Standing Committee on Environment and Heritage 'Inquiry into a Sustainability Charter'.

Widespread environmental challenges present an unprecedented need for policy reforms and institutional change that target improvements across diverse indicators. Environmental pressures, such as increasing use of water, energy and other resources, have not only contributed toward much of Australia's environmental degradation, but also the creation of a national economy that is inefficient and ecologically unsustainable. Urgent change is needed.

Crucial to Charter success is its commitment to change within a set timeframe. ACF therefore supports the development of an Australian Sustainability Charter that aims to achieve sustainability within one generation (ie. within 25 years). The legitimacy of this approach is evidenced in international models, such as *A Swedish Strategy for Sustainable Development* (2003) which articulates target outcomes within one generation. A Charter that proposes sustainability within a single generation provides opportunities to develop shorter term or interim indicators for positive change.

From resource productivity to biodiversity conservation, an Australian Sustainability Charter must set forth measures and pathways for a better future for all Australians. The Charter must therefore reflect the diversity essential to a national vision for a sustainable Australia. It must be informed by indigenous people and the broader Australian community, governments at every level, and specialists with scientific or industry expertise.

Critical to the Charter's success is the extent to which it operates beyond an 'aspirational vision'. It must deliver tangible, scientifically credible avenues for change. With this in mind, ACF encourages a Charter whose content is underpinned by two key factors:

1. sustainability objectives supported by time-bound bio-physical targets;
2. synthesis of domestic and international lessons in Ecologically Sustainable Development (ESD).

ACF recommends that clear and comprehensive objectives should underpin the Charter's development.

Headline objectives should provide the foundation for integrated time-bound targets which measure improvements in environmental condition and environmental pressure. From this position, ACF recommends a ten-point list of objectives as the basis for an Australian Sustainability Charter.

A full list of integrated targets is included in the submission document (see pages 27-29). Examples of these targets (beneath recommended headline objectives) are included here for your reference:

1. **Stop dangerous climate change**
   Example targets:
   a. Achieve at least 30% reduction in GHG (greenhouse gas) emissions within one generation (ie. by 2030)
   b. Achieve at least 30% renewable energy production by 2030

2. **Secure water for all life**
   Example targets:
   a. Reduce urban water use by 50% by 2030
   b. Return all freshwater systems (rivers, wetlands, estuaries) to ecological health by 2030

3. **Protect and conserve biodiversity**
   Example targets:
   a. Effectively conserve at least 15% of each of Australia's terrestrial ecological regions in a National Reserve System by 2020
   b. Protect at least 30% of Australian Marine ecosystems in marine protected areas by 2020

4. **Restore our land**
   Example targets:
   a. Stop the spread of dry land salinity and sub-soil acidification by 2030 and reverse the impact on high quality cultivatable land
   b. Reduce weed infestation by 25% by 2030, particularly in areas of high production and conservation status

5. **Ensure clean air**
   Example targets:
   a. Eliminate national releases of anthropogenic (human-produced) ozone-depleting substances by 2010
   b. Reduce by 50% the total emissions of toxic releases to air by 2030

6. **Eliminate toxins from our environment**
   Example targets:
   a. Ensure by 2030 that newly manufactured products and production processes are free from damaging organic substances
   b. Cap hazardous waste generate by 2010 and reduce by 50% by 2030

7. **Minimise waste**
   Example targets:
   a. Reduce by 2030 the generation of domestic, commercial and industrial waste by 30% from 2002 levels
   b. Recover 95% of domestic, commercial, industrial waste by 2030

8. **Use our resources wisely**
   Example targets:
   a. Reduce by 2030 total material flows in line with the leading 5% of OECD countries

9. **Reduce our environmental footprint**
   Example targets:
   a. Reduce Australia's cities / urban average ecological footprint from 4ha per person to 3 ha per person by 2050

10. **Make transport sustainable**
    Example targets:
    a. Increase shared 'low net carbon' transport use in Australian cities per capita to 25% by 2030
    b. Increase by 50% the average fuel efficiency of vehicles by 2030

ACF believes that Charter targets should build on the sustainability targets and indicators already set by certain Australian jurisdictions (ie. those currently engaged in effective sustainability initiatives). Biophysical targets should also be an expression of our nation's commitment to international agreements and protocols that relate to the environment.

An Australian Sustainability Charter not only provides Australia with the opportunity to elevate its environmental contributions to the global community. It also presents opportunities for Australia to increase its international competitiveness and economic resilience. For example, through long-term increases in resource productivity with reduced environmental impact, Australia could position itself as a world-leader in innovative economic and environmental policy. The key to this, however, resides in the

strategic implementation of the Charter's calls to action. Again, previous ESD experience provides crucial lessons in this regard.

Domestic and international ESD experience highlight the importance of appropriate institutional mechanisms that support the Charter's objectives. This is also highlighted in the 2005 *Sustainable Cities* report, with particular reference to the development of an independent Australian Sustainability Commission. Further to the report's recommendations, ACF encourages the development of a Commission established under a COAG agreement.

An Australian Sustainability Commission should have sufficient powers and resources to implement key strategies for resource productivity and ecological sustainability in Australia. These include pricing reforms that reflect environmental externalities, elimination of subsidies harmful to the environment, tax reform that moves the tax base away from labour and more squarely toward resource use, and efficient and effective delivery of national environment programs. ACF believes that an Australian Sustainability Charter that exists in the absence of a proactive and effectively resourced Commission is little more than a 'wish-list'. ACF therefore supports an Australian Sustainability Commission that has the power to develop and review national policies and programs and thereby inform the success of an Australian Sustainability Charter.

In summary, ACF recommends the development and implementation of an Australian Sustainability Charter that integrates the following critical factors:

- National leadership
- Active pursuit of sustainability within one generation
- Inclusive cross-sectoral and community participation
- Clear and comprehensive objective
- Scientifically credible and time-bound biophysical targets
- Synthesis of domestic and international lessons in ESD
- Establishment and efficacy of supportive institutional arrangements

The 'Inquiry into a Sustainability Charter' is an important step on the road to a better future for all Australians. ACF congratulates the Standing Committee on this much needed undertaking, and looks forward to further participating in the process of creating an Australian Sustainability Charter.

SUMMARY OF RECOMMENDATIONS

Supporting the development of an effective Australian Sustainability Charter, ACF offers the following recommendations:

1. ACF urges the Inquiry to consider processes of efficient and meaningful community engagement

2. ACF recommends that a process of Indigenous participation be developed (in consultation with Indigenous peoples themselves) that demonstrates robustness against key attributes.

3. ACF recommends that the scope and goals of the Australian Sustainability Charter should be expressed through *both* aspirational and tangible measures.

4. ACF supports a Charter that operates within the timeframe of 25 years – 50 years (a single generation). This provides opportunities to develop shorter term or interim indicators, and to promote progress toward sustainability that benefits existing and future generations of Australians.

5. ACF asserts that the Australian Sustainability Charter should include a set of clearly articulated headline (or thematic) objectives. ACF recommends the following objectives:

1. Stop dangerous climate change
2. Secure water for all life
3. Protect and conserve biodiversity
4. Restore our land
5. Ensure clean air
6. Eliminate toxins in our environment
7. Minimise waste
8. Use resource wisely
9. Reduce our environmental footprint
10. Make transport sustainable

6. ACF recommends that the Australian Sustainability Charter include time-bound biophysical targets that respond to the above objectives. Such targets should fulfil the following criteria:

- Targets should be appropriate in scale to the policy context (ie. local, regional, national)

- Targets should represent a concise set of themes that are indicative of the range of environmental problems
- Targets should be linked to policy targets including international obligations
- Targets should be time-bound and they should incorporate the physical laws of thermodynamics and mass balance
- Targets should be compatible with appropriate macro-economic indicators and the budgeting process
- Targets should be developed with broad community consultation and expert analysis
- Targets should be based on the best available science
- Targets should be independent and inter-related with key economic and social indicators
- Targets should be fair and just
- Targets should be backed up with funding and institutional arrangements

7. ACF recommends that the Charter and associated institutional reforms should be national and economy-wide in their scope. The Charter should focus on the key drivers of environmental degradation, and should be coupled with the following factors:

- national targets which are biophysical outcome-focused and time-bound within 25 - 50 years;
- the development of a national resource productivity model to be used to benchmark and assess performance in the achievement of resource productivity;
- a new outcome-based approach to incentive payments for States and Territories linked to the achievement of national sustainability targets;
- a national approach to pricing reforms that will ensure a transition to pricing regimes that reflect environmental externalities;
- a national approach to the elimination of harmful subsidies that affect the environment;

- a commitment to an independent system of national policy and program investigation and review (eg. Australian Sustainability Commission);
- new arrangements for major commonwealth investment - i.e. future fund - to ensure that major gains in resource efficiency do not create perverse environmental effects.

8. ACF strongly recommends that any future approach to productivity reform must be designed to simultaneously achieve Australia's environmental objectives with our economic objectives and thereby operate within a legitimate framework of sustainability.

C O N T E N T S

1.0 INTRODUCTION

This submission presents the Australian Conservation Foundation's (ACF) response to the House of Representatives Standing Committee on Environment and Heritage 'Inquiry into a Sustainability Charter'. ACF is committed to inspiring people to achieve a healthy environment for all Australians. ACF works with the community, business and government to protect, restore and sustain the Australian environment. For 40 years, ACF has been a strong voice for the environment, promoting solutions through research, consultation, education and partnerships. From this position, ACF is well placed to provide feedback to inform the 'Inquiry into a Sustainability Charter'.

This submission responds to questions raised in the Inquiry Discussion Paper and raises key points further to these. In doing so, ACF's submission outlines approaches to Charter development that embrace innovation and target the nation's economic and environmental resilience. As outlined in this paper, ACF proposes a Charter that targets national sustainability within a single generation - a Charter that is effective in both principle and practice, a Charter whose legacy is the creation of a sustainable future for all Australians.

2.0 THE SUSTAINABILITY CHALLENGE

The pursuit of a sustainable Australia is essential for both present and future generations. This is not least because widespread environmental challenges now threaten our ecological and economic security. Failing to respond to the sustainability challenge forgoes the opportunity to create an Australian society and economy that tread lightly on biophysical resources - a society and economy rich in high level skills and the flow-on benefits of an ecologically sustainable Australia.

These challenges present an urgent need for policy reforms and institutional change that target improvements across diverse biophysical indicators. Environmental pressures, such as increasing material flows, have not only contributed to much of Australia's environmental degradation, but also the creation of a national economy that is inefficient and ecologically unsustainable. In recognition of this, ACF strongly supports the development of an Australian Sustainability Charter, one that acts upon environmental need and economic opportunity.

2.1 Australia's environmental impacts at a glance

Whilst Australia has many natural assets and natural resources, extensive damage has occurred during the short time since European settlement. Such damage continues today, as Australian society consumes its resources at an increasing rate. The environmental impacts of this consumption are evidenced in countless statistics and reports. Snapshots from diverse biophysical fields provide an interesting overview of Australia's environmental track-record:

- According to the 2004 Australian Bureau of Statistics (ABS) report, *Measures of Australia's Progress*, Australia is going backwards on five of the six key environmental indicators: biodiversity, land clearance, land degradation, inland waters and greenhouse pollution. Urban Air quality is the only area of improvement[i].

- According to the National Land & Water Audit, threatened ecosystems occur across much of Australia. Most terrestrial bioregions (94%) have one or more threatened ecosystems. In all, there are 2891 threatened ecosystems and ecological communities across Australia. [ii]

- During the last 200 years, Australia's mammal extinction rates have been substantial. Twenty-two Australian mammals are now extinct. This represents a third of the world's recent extinctions. A further eight species persist only on islands, and a massive contraction in the distribution of mammals has occurred in arid and semi-arid parts of the continent. In agricultural areas, where a large proportion of the landscape has been cleared, 29 bird species have significantly decreased over the past 20 years.[iii]

- In the South West of Western Australia, climate change has caused a 65% reduction in total annual inflow to dams over the past 30 years. Total rainfall has declined by over 20%, and further drying is expected. Similar effects occur across all of southern Australia, with major implications for water supplies and water intensive industries.[iv]

- ACF and the National Farmers' Federation (NFF) have estimated that a total annual investment of $6 billion per annum (over ten years a total investment of $60 billion) is required to arrest salinity, which is expected to affect up to 22% of agricultural land by 2050.[v]

- The CSIRO has found that the following industry sectors use more than 500 litres per dollar contribution to GDP: Rice (8407L); Dairy cattle and milk (1452L); Sugar cane (1246L); Cotton (1613L); Beef Cattle (731L); Services to Agriculture (584L); Dairy products (652L); and Flour and cereal foods (617L). [vi]

- Each year, every Australian (on average) produces the following:
    - 25.6 tonnes of greenhouse pollution per capita per year (the highest amongst developed nations); [vii]
    - 1540 kL of water-usage (the highest of any continent). Even though this is the driest inhabited continent in the world, Australia's water-use exceeds all other countries (1510 kL/year per capita in North America; 665 kL/year in Europe; 650 kL/year in Asia; 670 kL/year in the world [viii]). On average, total water use in Australia increased by 65% between 1983/84 and 1996/97.[ix]
    - Total material flows of almost 180 tonnes per person per year. This is several times the material flow per capita of other OECD countries [x]. This reflects the relative un-sophistication of the Australia economy in its reliance on raw material and commodity exports.
    - 620 kg of domestic waste per person per year. This is second only to the USA. When commercial, industrial, construction and demolition wastes are added, Australia has a waste disposal stream of 1.15 tonnes per person per year.[xi]

- During the early 1990s, invasive plants (weeds) were alone estimated to have cost the Australian economy $3.3b each year in lost agricultural production and control costs. The cost to the wider environment is virtually unknown[xii]

- In 2002, figures estimated that 30 of the more serious animal pest species cost the economy at least $420m a year (mainly in lost agricultural production).[xiii]

- In 2004, introduced species included 26 mammals, 20 birds, four reptiles, one amphibian and at least 23 freshwater fish[xiv], along with about 2,000 plants.[xv]

Australia's environmental performance is reason enough for concern. But when coupled with the country's vulnerability to climate change (as identified by CSIRO), the need for urgent action becomes clear.

2.2 Australia's vulnerability to climate change

CSIRO has identified that loss of unique natural habitats, increasingly scarce water supplies, and more frequent extreme weather events will all have serious implications for important industry sectors within the Australia economy. This is detailed in the table on the next page (Source: CSIRO (2006)[xvi]).

Table 1 Impacts on Australia from Global Temperature Rises (above current levels)

Temp rise	Tourism	Water and Primary Industries	Infrastructure and Insurance
>4°C	• Most Australian vertebrates lose 90 to 100% of their core habitat	• Extreme rainfall in Victoria increases by 25%	• Peak electricity demand in Adelaide, Brisbane and Melbourne increases by 9 to 25% • 180 days a year above 35°C in SA and NT • "100-year" storm tides along Victoria's east coast 30% more frequent
>3°C	• Distribution of Great Barrier Reef species shrinks by 95% • 65% of Reef species lost in Cairns region • Snow-covered alpine area shrinks by 20 to 85% • "60-day" snow cover declines by 40 to 95%	• 55% loss of Eucalyptus core habitat • Timber yields in southern Australia rise by 25 to 50%, but fall by same margin in North Qld and the Top End • Australian primary production falls by 6% • Flow in the Murray-Darling falls by 16 to 48%	• Dengue fever transmission zone reaches Brisbane and possibly Sydney • Temperature-related deaths of people over 65 rise by 144 to 200% • Oceania experiences a net loss of GDP
>2°C	• 97% of the Great Barrier Reef bleached • 80% of Kakadu freshwater wetlands lost	• Pasture growth slows by 31% • Macquarie River Basin (NSW) flows fall by 5 to 35% • Livestock carrying capacity in native pasture systems falls by 40%	• Temperature-related deaths of people over 65 rises by 89 to 123% • Road maintenance costs in Australia rise by 17%, despite a decline in South Australia • "100-year" storm tides along Victoria's east coast 15% more frequent • Tropical cyclone rainfall increases 20 to 30%, as wind speed increases 5 to 10% • Forest fire danger rises 10% across Australia
>1°C	• 81% of the Great Barrier Reef bleached • Vertebrates in the World Heritage Wet Tropics lose 90% of their core habitat	• Melbourne's water supply falls 7 to 35% • Murray-Darling flows fall 12 to 25% • Queensland fruit fly spreads south • 40% loss of Eucalyptus core habitat	• Height of '100-year' storm surge at Cairns rises 22%, doubling the flooded area • Storm surge rises 25% along Victoria's east coast • Double the people exposed to flooding in Australia and New Zealand
<1°C	• Snow-covered alpine areas shrink by 10 to 40% • Vertebrates in the World Heritage Wet Tropics lose half their habitat	• 14% of Victoria's marine invertebrates lose habitat • Droughts in NSW 70% more frequent and more widespread • Wheat production increases with temperature rises up to 3 to 4°C, if precipitation also increases; but export value declines	• Melbourne's water supply falls 3 to 11% • 18% more days above 35°C in SA • Extreme rainfall 10 to 20% more intense in NSW • Electricity infrastructure suffers 3% decrease in transmission efficiency • Demand for natural gas heating in Melbourne falls • Peak electricity demand in Melbourne and Sydney falls by up to 1%, and rises in Adelaide and Brisbane by 2 to 5%

The implications of climate change pose serious challenges to industry, governments, and the Australian people. Global climate change also highlights the reality that 'the future of all regions of the world...is linked, and that local action alone cannot secure sustainability' (Barber et al 2004, cited in Hill, R). Climate change articulates the need to review Australia's activities within the context of their impact on both local environments *and* the global community to which we belong. This mutual responsibility is a challenging confrontation, but one that can be faced (at least in part) through an Australian Sustainability Charter.

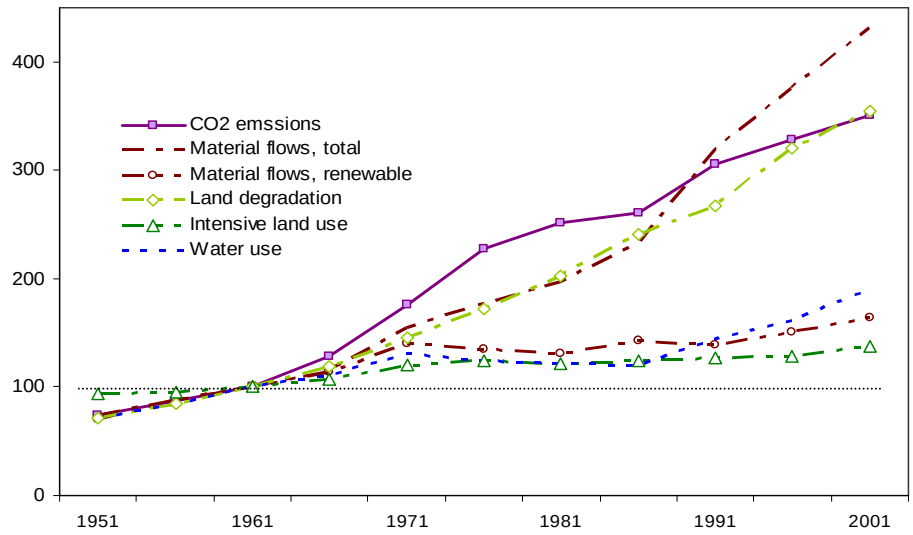
Indeed, in the face of potentially radical changes to environment and economy alike, an Australian Sustainability Charter provides a path forward. Not only aspirational, the Charter presents a tangible opportunity to address critical issues that lie at the heart of the climate change threat, issues that fuel the degradation of Australia's natural environment.

2.3 Environmental pressure of material flows

The Australian economy is 'materialising' rather than 'dematerialising', with challenging implications for the environment. Dramatic increases in natural resource use over the past fifty years have generated serious environmental pressure, as indicated by these CSIRO figures:

- Intensive land use has increased by 48% driven by increases in cropping (81%) and sown pasture (408 %);
- Land degradation increased from 2 million hectares in the early 1950s to 9 million hectares in 2001;
- Total water use has risen by around two thirds in the last 50 years. Increased irrigation, which has grown six times over the last 50 years, accounts for 60% of this increased water use;
- Total CO2 emissions from fossil fuels have risen about 370 percent;
- Material flows have increased six-fold over the last half century, more than any other indicator. [xvii]

Figure 1 Indicators of Australian environmental pressure, 1951-2001



Source: CSIRO 2006

Whilst the 'relationship between environmental quality and income (or economic development) is neither straightforward nor…harmonious',[xviii] an interesting dynamic exists: the six-fold increase to total material flows over the last half century (as illustrated above) is equivalent to a compound growth rate of 3.7 per cent per annum for fifty years. This represents a more rapid growth rate than real GDP (3.5 percent) over the same period. As the CSIRO reports, 'resource extensive growth appears to remain an important part of the increases in economic activity achieved over the last fifty years'. That the growth of material throughput exceeded economic growth during this period implies that environmental pressure would have risen on this indicator - even in the absence of economic growth [xix].

Australia's economy currently operates with low levels of resource efficiency. This is a consequence of four historical factors:

- Reliance on low value added exports with global commodity prices that result from a global economic system that systematically undervalues natural resources;
- Orientation of the Australian economic structure toward types of production and consumption that contain high levels of embodied energy, water and materials;
- Entrenched inefficiencies in Australia's production and consumption systems that result from the free, cheap, or massively subsidised availability of abundant resources for economic production;
- Absence of a national policy and regulatory regime to encourage more efficient use of natural resources.

Australia's physically inefficient economy has not only driven much of the country's environmental degradation, it has simultaneously perpetuated a perception of growth that undermines Australia's productivity potential.

Australia's energy use provides a case-in-point. Any country with an energy surplus such as Australia finds it relatively easy to grow its GDP by burning energy. The real challenge is to get the same degree of GDP with half the energy use. This is the efficiency challenge, for which there is huge potential in Australia.

In response to this, a Sustainability Charter should seek to redress the economic inefficiencies and ecological inequities of Australia's current systems of resource use, production and consumption. In its call for positive change, the Charter enhances the country's capacity to reduce material flows and environmental pressure and still achieve economic growth.

3.0 THE SUSTAINABILITY OPPORTUNITY

Sustainability presents lucrative opportunities - options for mutual gain and shared responsibility that empower behavioural shifts toward a united goal amongst diverse groups. A sustainable Australia necessarily embraces relationships with diverse stakeholders - communities, businesses, governments, markets, the land and natural environments. And it does so through encouraging the combination of technical expertise and environmental best practice within a social and economic context that represents positive change. Such change not only benefits future generations, but also delivers real benefits for the ways in which Australians live and conduct business today.

3.1 Environmental and Economic Opportunity

There are numerous examples of countries who are legitimately and proactively working toward sustainability (eg. Denmark, Sweden, and the Netherlands). In doing so, these countries have reduced waste and increased efficiency. And they have yielded economic returns and environmental cost-savings in the process.

From health and resource management, to energy efficiency and water – an ecologically advanced Australia has the potential to not only protect and enhance its natural and human resources, but to simultaneously maintain high standards of living and develop global competitive advantage. Through a national focus on sustainability, Australia can empower its capacity to develop and export valuable technologies and skills that ensure the nation is a proactive and competitive participant in the global village to which it belongs. The development of alternative energy technology provides a case-in-point.

3.2 Energy Efficiency: A case for sustainable practice

Given the environmental pressure of Australia's increasing resource use, and the nation's vulnerability to climate change, it is appropriate to discuss opportunities to address these issues through energy efficiency. Significant research conducted in this field demonstrates that real economic and environmental benefits can be gained. With this in mind, an Australian Sustainability Charter should target improvements in Australia's energy efficiency in recognition of its contribution to greenhouse reductions, enhanced GDP, and cost-savings for all Australians.

The Australian Government's energy white paper, *Securing Australia's Energy Future*, indicates that many businesses and households can save 10% to 30% on their energy costs without reducing productivity or comfort levels. This would equate to $5 to 15 billion AUD in potential energy savings. [xx] The white paper also estimates that 'increasing the uptake of commercial energy efficiency opportunities could increase GDP by $975 million a year and significantly reduce greenhouse gas emissions'. [xxi]

Similar figures are provided by research conducted for the National Framework on Energy Efficiency. With only 50% market penetration, implementing energy efficiency programs with a pay-back of 4 years or less is estimated to generate significant reductions – ie. it would reduce residential energy use by 13%, commercial energy use by 10.4%, and industrial energy use by 6.2%.

It is important to keep in mind that these estimates are conservative and are based on a 'business-as-usual' policy scenario. They do not factor in the potential derived from other factors: namely, demand management savings through investment in new technologies; changes to operational and community behaviour; or policy reforms that provide greater incentives and disincentives.

Nor do these figures account for the 'rebound effect'[xxii]. 'Rebound effect' (or feedback, take-back, snap back, re-spending, policy backfire) is 'generally ignored or denied by greenhouse policies in developed economies, and by many environmental groups'[xxiii]. A contentious issue amongst scholars, the 'rebound effect' can be understood as follows:

> In the energy context today, rebound is seen as having three components: direct, indirect and equilibrium. 'Direct' rebound occurs when a more efficient motor car or home heating technology lowers the cost of the energy service (transport miles, a warm house) and thus allows more miles to be driven or the house to be heated for a longer period. 'Indirect' rebound occurs when the monetary savings from the 'direct' effect allows a greater range of consumption activities eg a second car, more energy using appliances at home, an overseas airline trip. 'Equilibrium' rebound occurs when a wide range of more efficient energy services cascade throughout the economy, stimulating what economists like to call a 'larger cake' where everyone possibly gets a larger slice.
>
> …Technical specialists who deal with sectoral or direct rebound effects show that rebound can reach 20% ie. a new car that is 50% more efficient uses only 30% less fuel because 20% is taken up driving more kilometres[xxiv].

Whilst the argument for cost-savings in energy efficiency programs has merit, unless the savings are taken out of the economy, it is possible they may stimulate the 'rebound effect'[xxv]. More work in this area is needed, however, to ensure effective modelling and treatment of this phenomenon, particularly at the level of whole-economy.

Not-with-standing effective analysis and modelling for 'rebound effect', consideration needs to be given to the broad range of short and long-term benefits derived from energy efficiency programs. These include flow-on environmental rewards, not least through energy efficiency as a counter-measure to climate change. The OECD International Energy Agency (IEA), for example, explicitly notes in its 2005 energy policies review for Australia that 'improved energy efficiency offers an important, immediately available tool for cutting GHG [greenhouse gas] emissions. Australian energy intensity is quite high with primary energy per unit of gross domestic product (GDP) 35% above the IEA average'.[xxvi]

An Australian Sustainability Charter needs to respond to the opportunities that energy efficiency represents. The Charter needs to respond to Australia's over-consumption of natural resources and inefficient production systems. And the Charter needs to respond with urgency.

Right now, Australia tends toward higher levels of environmental impact than its international competitors. Australia uses larger quantities of water, energy and materials for every unit of economic output than most other nations. Currently, this is claimed as 'comparative advantage' because the full life cycle cost of natural production chains are not included in market prices.

Australia could gain real advantage, however, and increase its international competitiveness and its economic resilience by driving long-term increases in resource efficiency alongside reduced environmental impacts. Australia could (indeed, should) lead the world in adopting innovative approaches to economic and environmental policy. Such innovation includes the development of an Australian Sustainability Charter, one that responds to the lessons of our past, creates a clear vision for the future, and stimulates the changes needed to secure a sustainable Australia for all Australians.

4.0 THE ROLE OF AN AUSTRALIAN SUSTAINABILITY CHARTER

From ACF's perspective, an Australian Sustainability Charter should outline the changes that are needed to reduce pressure on the environment and secure a healthy future for all Australians. It should inspire national leadership from government, business and the community. To achieve this, the Charter should identify urgent issues, set national objectives, and specify targets and milestones. It should outline priority actions that Australia should pursue to achieve sustainability within a generation. With this in mind, Australia has the opportunity to create a Charter that sets a new benchmark for environmental policy and practice. A potential rallying-point for immediate and long-term policy reform, the Australian Sustainability Charter should operate as an effective tool to inform and renew commitment to an effective national strategy for a sustainable Australia.

A clear vision of Australia's future resides at the heart of a Sustainability Charter. This vision must necessarily be developed through a collaborative process that acknowledges the diverse needs of every Australian.

5.0 SUSTAINABILITY STAKEHOLDERS

An Australian Sustainability Charter should promote a positive vision for a just, equitable and ecologically sustainable society, a vision that is relevant for all Australians. Through its vision, the Australian Sustainability Charter must simultaneously address the needs of diverse stakeholders – from government and industry, to regional communities, individual householders and families.

Integrating diverse needs is no small task. Its enormity, however, is exceeded by its necessity. In order for an Australian Sustainability Charter to gain acceptance within key industry sectors, metropolitan and regional communities, it must be developed collaboratively and implemented through collaborative action. In this way, the Charter can realistically target a nationwide transformation toward new ways of living that are better for communities, business, and the environment.

5.1 The Need for Stakeholder Participation

A nation with high environmental quality across all sectors will inevitably mean a different style of economic system, but one which can more than adequately fulfil human needs and aspirations. The Australian Sustainability Charter should provide a framework to signpost the directions for change, yet still allow flexibility and innovation. A key challenge for the Charter, then, resides in establishing united goals.

Such challenges can not be effectively navigated through isolated agents for change. That is, if the Government's sustainability agenda operates beyond lip-service - if it seeks legitimate change - then Government departments alone can not achieve the vision and transformation necessary to realise a sustainable Australia. Real, on-the-ground change can only take effect if nation-wide participation is actively pursued. This calls for a process of community and cross-sectoral engagement that operates across a specified and realistic timeframe, and throughout the Charter's development, implementation, and (ultimately) its strategic fulfilment.

Indeed, in order to ensure effective coverage of diverse interests, the objectives and targets for an Australian Sustainability Charter should be established independent of government. In consultation with industry and the community, this should be the first task of a National Sustainability Commission (discussed later in this submission).

The need for diverse participation – from government to local communities - is further supported in *Strategies for National Sustainable Development*[xxvii]:

- 'Economic, environmental and social goals are value-laden. Therefore local values, as well as local knowledge and ideas, need to be integrated with scientific analyses in strategic decisions. Multiple perspectives should be sought.
- Sustainable development requires the joint awareness and action of governments, communities and individuals. The household is ultimately the key player. Sustainable development will, in practice, be the result of many millions of actors working separately and together'.

There is no 'rule of thumb' regarding the extent of participation across diverse interest groups or industry sectors. It makes sense to work within the bounds and objectives specific to the program in question. Given the anticipated objectives of an Australian Sustainability Charter, and the systemic challenges that accompany these, it might seem that a 'judicious mix of economic, environmental and social sciences can arrive at a fair balance between goals (and generations)'[xxviii]. But, as stated in *Strategies for National Sustainable Development*, this is seldom the case in practice[xxix]. It can, therefore, be argued that a 'science-based' approach must be complemented by a more 'people-centred' approach – ie. participation / collaboration. Hard decisions will need to be made; these should be resolved through a negotiation framework, one which can facilitate fair transitions for effected people.

Internationally, collaboration is an important approach to natural resource management. It tends toward the promotion of creativity, recognition of values difference, and the pursuit of mutually acceptable outcomes[xxx]. Collaborative approaches share much in common with the theory and practice of deliberative democracy. This is not least because of their emphasis on thoughtful deliberative processes to address often complex and controversial issues[xxxi]. It is also worth noting that collaborative approaches have arisen in response to growing dissatisfaction with other models of decision-making. These include the agency-driven public participation model, and sector-driven negotiations model[xxxii].

Australia has a profound opportunity to develop a highly innovative and engaging Charter in pursuit of national sustainability. For this reason, ACF urges the Inquiry to consider the benefits that can be derived from a well-conceived and effectively managed process of cross-sectoral and community participation – benefits that extend beyond the development of the Charter document into the world of lived sustainability.

5.2 Bringing science and people together

As a means of conceiving possible routes for participation, ACF recommends the Inquiry consider a two-track community and expert process that supports the technical and visionary aspects of Charter creation. Whilst this approach is not exhaustive, it provides a starting point for the exploration of participatory processes within the context of an Australian Sustainability Charter:

- Technical aspects (eg. target development) should be supported by key specialist agencies. These might include, for example, universities supported by government agencies such as the CSIRO, Australian Bureau of Statistics, and Productivity Commission.
- Aspirations of the community should be expressed through the Charter objectives, a collective vision for a sustainable Australia that is encouraged through grass-roots and stakeholder participation.
- Opportunities for Charter innovation should be encouraged through dialogue between communities and experts.

ACF urges the Inquiry to consider processes of efficient and meaningful community engagement that can be activated not only amongst people in positions of political power, but also amongst those who have previously been marginalised through economic processes. Such marginalisation frequently occurs at the expense of collective wisdom, knowledge that extends mainstream frames of reference and empowers innovative, transformational decision-making. The absence of Indigenous wisdom from Australia's mainstream environmental and economic decision-making is a case-in-point.

5.3 Indigenous knowledge and collective wisdom

With close relationships to Country that extend tens of thousands of years, the Australian Indigenous peoples have much to contribute to an Australian Sustainability Charter. Indigenous knowledge of land use and environmental relationships, for example, provide a wealth of learning opportunities for non-Indigenous Australia. In his book, *The Future Eaters* (2002), Tim Flannery argues for an Australian culture which not only acknowledges the wisdom of the Indigenous peoples, but accords that wisdom the status and respect it deserves. This is not least because Indigenous land practices ensured ecological sustainability for many millennia prior to European settlement.

Indeed, Flannery calls for an Australian culture which learns and grows from Indigenous knowledge of the natural environment.

Beyond the wisdom that can been gained through Indigenous input into Charter development, Indigenous people need to be engaged within a participatory process for reasons specific to their own sustainability needs. This is because Indigenous sustainable development entails its own challenges, above and beyond those implicit within mainstream economic and environmental decision-making.

Despite their lengthy history with the continent, it is only since European settlement that Australia's Indigenous peoples have been forced to confront widespread threats to their cultural, economic and environmental sustainability. 'The socio-economic disadvantage of Australian Indigenous people generally is pervasive and in some cases declining: the life expectancy of Indigenous people is around 17 years lower than the Australian population; the age standardised employment rate in 2002 was 3.2 times higher for Indigenous than non-Indigenous people; and Indigenous household and individual incomes are on average lower'[xxxiii].

Indigenous Australians have repeatedly expressed their desire to reclaim ownership of their livelihoods and collective future. For example, through the Appropriate Economies project, Kimberley Aboriginal people clearly established that they want 'an economic system in the region that is culturally, socially, environmentally and ecologically sustainable'[xxxiv]. The achievement of this necessitates the active involvement of Indigenous people within strategic and decision-making processes. The Appropriate Economies project demonstrates a viable model for the integration of knowledge and learning derived through small working groups and open forums. During the small working groups, participants developed their own sustainability criteria, which were then refined through open discussions.

Whilst community-based participatory approaches are widely recognised as critically important to achieving sustainability[xxxv] they also suffer from weaknesses. For example, community-based approaches fostered by the Australian Government through the Natural Heritage Trust have been identified as systematically marginalising Indigenous peoples[xxxvi]. Countering marginalisation is crucial to sustainability success. In a review of community-based conservation, cross-scale integration was identified as a strategy to address this[xxxvii].

A number of opportunities underscore effective Indigenous participation:

- People acting in their roles as citizens, using cultural, scientific and other knowledge to set the parameters of and criteria for sustainability (underpinned by ecological economics theory)
- Indigenous peoples building their own planning, decision-making and governing capacity (underpinned by economic development theory)
- Diverse participants bridging local, national and international perspectives on sustainability (underpinned by recognition of global dimensions of sustainability)[xxxviii]

Within the context of an Australian Sustainability Charter, Indigenous participation processes should be developed and implemented over time. Such processes should actively strive to build mutual understanding and trust. And they should work with an awareness of the key issues that can cause conflict (particularly between Indigenous and environmental interests). Potential issues include the 'creation of protected areas, rights to land and water, the cultural basis for environmental management, and Indigenous decision-making rights'[xxxix].

When considered in relation to current theory of collaborative approaches to natural resource management[xl], ACF recommends that a process of Indigenous participation be developed (in consultation with Indigenous peoples themselves) that demonstrates robustness against key attributes. These include explication of a common purpose, adoption of multiple approaches to communication, and an emphasis on mutual learning[xli] and self organising capacity.

5.4 Benefits of Stakeholder Participation

> *Tell me and I'll forget; show me and I may remember; involve me and I'll understand.*

Quoted in 1994 by Andrew Campbell[xlii], now Director of Land and Water Australia, these words articulate a core benefit of stakeholder participation. They also point toward the important fact that the potential effectiveness of an Australian Sustainability Charter can be measured in terms that extend beyond the document itself. The effectiveness of sustainability strategies is typically measured in terms of beneficial products. These products include the following:

- Enhanced understanding and action on sustainable development issues, both within and between interest groups;
- Improved communications within and between interest groups;
- Decisions on the main issues, and what to do about them;
- Networks of committed individuals and institutions; and
- Renegotiations of responsibility between interests, and joint actions for sustainable development[xliii].

Various sustainability endeavours have been widely criticised as 'unsuccessful' (including Australia's own *National Strategy for Ecologically Sustainable Development*, discussed later in this submission). Whilst such initiatives may have achieved some level of participation, they have 'failed' due to conflict with the goals of powerful decision makers. This tension needs to be clearly managed in the creation of an Australian Sustainability Charter.

Lessons of the past (discussed later in this submission) demonstrate that the Charter should not be planned and implemented by Federal Government alone. In sharing the responsibility, Federal Government has an opportunity to support the development of consultative partnerships across all levels of government, industry, and non-government organisations.

'All actors need to be motivated to deliver a sustainable future'[xliv]. This means the Charter process must embrace 'debate, consensus-building, commitment and action' to be successful'[xlv]. If a sustainable future for all Australians is to be realised, then all Australians must be reflected in the document's creation.

6.0 THE SCOPE OF A SUSTAINABILITY CHARTER

The relevance and useability of an Australian Sustainability Charter resides in the document's scope. As such, its goals should be expressed through *both* aspirational and tangible measures. The Charter must be aspirational in-so-far as it sets a framework within which to deliver sustainability within a specified timeframe (namely, one generation). As a functional document, the Charter needs to be more than a 'wish-list' of environmental, economic and social goals. From the perspective of ecological sustainability, the tangibility of the Charter resides in the time-frame, rigor and clarity of its response to the full range of Australia's environmental problems.

6.1 Charter objectives

Clearly articulated objectives form the foundation for the development of an effective Australian Sustainability Charter. Implicit in their robustness are a number of key attributes.

6.11 Time-frame: Sustainability within one generation

> Promotion of ESD outcomes requires a long term focus, hence planning and management arrangements must also adopt a long term view, certainly beyond the time frame imposed by the political cycle. [xlvi]

In 1999, the Swedish Parliament voted to adopt 15 environmental objectives and a suite of national targets. Documented in *A Swedish Strategy for Sustainable Development* (2003), the targets (or measures) cluster around each objective to provide a clear model through which to track and report progress. Perhaps the most important feature, however, of the Swedish model is its commitment to making changes within a fixed time-frame of one generation. Adopted by the Swedish Parliament, the overall goal is to 'pass on to the next generation a society in which the major environmental problems now facing us have been solved'.

> It is possible for agencies and governments to incorporate longer time frame processes. Some examples include Commonwealth and State commitments to 20 year terms in regional forest agreements and 80+ years in the long history of the Murray-Darling Basin Commission. [xlvii]

ACF supports a Charter that operates within the timeframe of 25 years (a single generation). This provides opportunities to develop shorter term or interim indicators, and to promote progress toward sustainability that benefits existing and future generations of Australians.

6.12 Critical Issues: Headline objectives and targets

While some of the objectives set for the Swedish model have relevance for Australia, the environmental assets and issues of these countries are significantly different. It is with this in mind that ACF proposes the following 10 objectives as the basis of an Australian Sustainability Charter:

1. Stop dangerous climate change
2. Secure water for all life
3. Protect and conserve biodiversity
4. Restore our land
5. Ensure clean air
6. Eliminate toxins from our environment
7. Minimise waste
8. Use our resources wisely
9. Reduce our environmental footprint
10. Make transport sustainable

Within each of these headline objectives exist opportunities to articulate what the attainment of them might 'look' like. In other words, an Australian Sustainability Charter holds the capacity to clearly define appropriate targets through which these objectives might be achieved. From this perspective, ACF recommends the following measures as a benchmark for consideration in the development of an Australian Sustainability Charter:

1. **Stop dangerous climate change**
    - Reduce GHG (greenhouse gas) emissions by 60% by the year 2050, and achieve at least 30% reduction within one generation (ie. by 2030)
    - Achieve at least 30% renewable energy production by 2030
2. **Secure water for all life**
    - Reduce urban water use by 50% by 2030
    - Ensure all currently over-allocated or over-used water systems operate to environmentally-sustainable levels of extraction by 2015
    - Return at least 1500 GL of water to the Murray-Darling rivers for environmental use by 2015

- Return all freshwater systems (rivers, wetlands, estuaries) to ecological health by 2030
- Ensure all rivers are in good or better condition (as per agreed or accredited methodology) by 2030.

3. **Protect and conserve biodiversity**

- Effectively conserve at least 15% of each of Australia's terrestrial ecological regions in a National Reserve System by 2020
- Cover 80% of the number and extent of regional ecosystems in a national reserve system by 2010 and 100% by 2015
- Protect at least 30% of Australia Marine ecosystems in marine protected areas by 2020
- Ensure no new extinctions
- Contain 100% of rare, vulnerable, endangered ecosystems and species within protected areas by 2030
- Ensure net gain across the landscape of the extent and quality of native vegetation by 2020. Increase the extent and quality of native vegetation by 10% by 2030

4. **Restore our land**

- Stop the spread of dry land salinity and sub-soil acidification by 2030 and reverse the impact on high quality cultivatable land
- Reduce surface soil loss reduced to pre-European settlement rate (as per agreed methodology)
- Ensure no new weed/pest species have been introduced
- Reduce weed infestation by 25% particularly in areas of high production and conservation status (as measured by agreed methods & indicators) by 2030

5. Ensure clean air

- Eliminate national releases of anthropogenic (human-produced) ozone-depleting substances by 2010

- Ensure levels of ambient air pollution indicators (sulphur dioxide, nitrogen dioxide, ground level ozone, lead, particulates, carbon monoxide) exist below national standards for all indicators by 2020
- Reduce by 50% the total emissions of toxic releases to air by 2030

6. Eliminate toxins from our environment

- Eliminate anthropogenic (human produced) releases of persistent organic pollutants by 2015
- Ensure by 2030 that newly manufactured products and production processes are free from damaging organic substances (ie. toxic, persistent and / or bio-accumulative)
- Eliminate releases of toxic heavy metals (mercury, cadmium and lead) by 2030
- Ensure by 2030 that newly manufactured products and production processes are free (as far as possible) from toxic heavy metals (mercury, cadmium and lead)
- Cap hazardous waste generation by 2010 and reduce by 50% by 2030

7. Minimise waste

- Reduce by 2030 the generation of domestic, commercial and industrial waste by 30 % from 2002 levels (this equals total per capita waste generation of 1.2 tonnes per annum. Based on Victorian figures)
- Recover ninety five percent of all domestic, commercial and industrial waste by 2030
- Innovate production and consumption chains (and behaviours) so that low physical consumption is the norm, backed up by materials that can be fully and easily recycled.

8. **Use our resources efficiently**

- Reduce by 2030 total material flows in line with the leading 5% of OECD countries
- Increase by 2030 the ratio of material flow to dollar value.

9. Reduce our environmental footprint

- Reduce the average ecological footprint of Australia's cities/urban from 4 ha per person to 3 ha per person by 2050.

10. Make transport sustainable

- Increase shared 'low net carbon' transport use in Australian cities per capita to 25 % by 2030
- Increase 50% the average fuel efficiency of vehicles by 2030
- Measurably reduce the total passenger vehicle kilometres travelled per annum by 2020

The marriage between objectives and targets supports the need for performance measurement during the process of implementing sustainability strategy. Given an Australian Sustainability Charter provides the foundation for strategy development, it presents a timely opportunity to determine performance measures – ie. measurable, time-bound targets and indicators that articulate the successful achievement of objectives.

This approach corresponds with that expressed by the Productivity Commission. As recommended by the Productivity Commission, departments and agencies should 'regularly, and as a matter of course, monitor the efficiency and effectiveness of their ESD related policies, programs and regulations'. This is consistent with the principles of good policy making. As argued by the Productivity Commission, 'development of performance indicators against clearly stated objectives should occur early in the policy development process'.[xlviii]

The Productivity Commission also recommends that the Commonwealth, State, and Territory governments should develop institutional and analytical frameworks that facilitate performance measurement and enable comparisons between jurisdictions and program areas. Further to this, the Productivity Commission argues that once priority areas are identified, 'performance measurement and comparison should be carried out on an ongoing basis.' The Commission states that indicators should focus on 'program efficiency (including resources used (inputs) and program or policy results (outputs)) in the short to medium term'. Other indicators should focus on 'effectiveness – program or policy impacts (outcomes) against the agreed longer term environmental and sustainability objectives'. [xlix] Proper tracking and integration will likely require the development of holistic frameworks that link and integrate key physical processes with key nodes (i.e. cities,

industries) as well as sectors of consumption with important social and economic indicators.

In agreement with this, ACF recommends that an Australian Sustainability Charter should include clearly articulated headline (or thematic) objectives such as those outlined in this submission. ACF further argues that, in order to determine in coming years the success (or otherwise) of the national pursuit for sustainability, outcome-based targets should also be included. These provide a crucial measure of performance. They help to identify Australia's progress toward ecological sustainability in terms of environmental pressure, condition, and (in later strategy development) institutional response.

6.2 Charter Outcomes

Projected outcomes, rather than short-term activities, should form the substance and rigor of an Australian Sustainability Charter. These outcomes can be divided into two distinct areas: an aspirational vision, and tangible measures of sustainability success.

6.21 A clear vision for a sustainable Australia

> The year is 2030. In a single generation, Australians have redefined their relationship with the environment, each other, and the global community. A mark of the great visionaries of our time, courageous leadership has forged the way for this country's most potent and inspiring achievement: a sustainable environment for present and future generations. Compelled by knowledge and need, Australians now walk a path toward an Earth shared by all people and species - a path that yields economic prosperity and cultural abundance without harming the lifeblood of human well-being[i].

The vision for a sustainable Australia forms the 'heart and soul' of an Australian Sustainability Charter. It should provide a clear, inspiring and accessible expression of what a sustainable Australia might be like within a certain period of time. It presents a narrative of Australia's achievements across diverse biophysical, social and economic spheres that translate to real, positive changes in how people live and conduct business.

6.22 Foundations for change

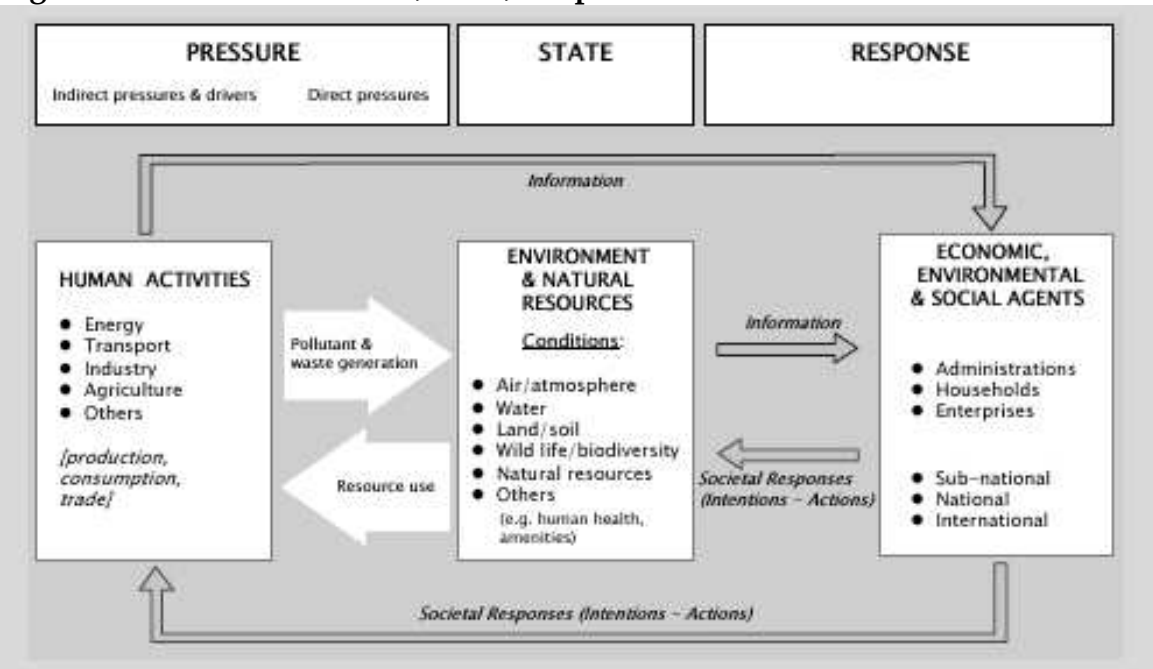
The 10 headline objectives (listed above) address key environmental issues that presently confront Australia. They also contain opportunities to measure both environmental condition and environmental pressure through

quantifiable time-bound targets and indicators. Appropriate sustainability targets provide a foundation for change. They build on effective measures already set by Australian jurisdictions, and they express our nation's commitment to international agreements and protocols that relate to the environment. But suitable targets go even further than this. They lay the groundwork for transformation toward future living and business. They focus our innovation goals for industry, institutions and households, clarifying the outcomes, achievements, and milestones that shape the 'big picture' of a Australia's future.

In pursuit of a useful and effective Australian Sustainability Charter, it is important to target measures of environmental pressure and condition (also referred to as 'state'). Typically, Australian biophysical targets have focussed on environmental response and (as argued in later sections) have not maximised opportunities for informed sustainability strategies.

While pressure, state and response models (with various modifications) have formed the basis for State of the Environment reporting, they are criticised as failing to specifically quantify targets and/or provide mechanisms to improve performance in critical areas.

Figure 1.0 Standard Pressure, State, Response Model



Source: OECD 2003.[li] For further information, see Appendix:
Attachment 1.0 - OECD definitions of environmental pressures, state and response.

7.0 THE NEED FOR SUSTAINABILITY TARGETS

The usefulness (and success) of scientifically sound targets is widely accepted. However, to be ultimately successful, targets need to based in the real world, constrained by physical laws of thermodynamics and mass balance.

Appropriate targets and indicators can meet the challenges of performance measurement. Though challenging in their selection, targets can prove invaluable to the development of sustainability strategy (as outlined in later sections). What is worth noting here are three key points on the selection of targets that relate to environment condition and environment pressure:

1. targets need to be based in the real world, constrained by physical laws of thermodynamics and mass balance;
2. targets should provide links with current State of the Environment (SOE) reporting and provide opportunities to sharpen existing reporting measures around long term targets;
3. targets should be accompanied by scientifically sound and potentially complex indicators and measurement methods.

A key challenge is to achieve agreement on specific targets, indicators and measurement methods. Progress has already been made, however, as development of some key indicators, for example, has already been initiated in various government programs (eg. N.H.T. and S.O.E.).

What is perhaps most significant about the use of targets and indicators is their capacity to articulate where the nation is heading in pursuit of sustainability within one generation.

7.1 Establishing a 'destination'

> The targets should be measurable, time-bound and achievable, and focused on outcomes rather than processes. They should be reviewed every five years. Commonwealth funding should be dependent on the targets being met. [lii]

International and domestic experience shows that an Australian Sustainability Charter needs to include targets and quantifiable pathways (i.e based on modelling) to guide our progress toward sustainability. The targets should describe the future 'destination' of a sustainable Australia in order to guide the 'journey'. This will enable sound decision making in relation to the

selection of initiatives that will deliver the best environmental outcomes for the effort or investment required to implement them. By ensuring that targets are based on the overall environmental outcome, Government will create a driver for innovative projects and policy responses without prescribing, and therefore limiting, the solutions themselves.

The process of setting targets, and investing in initiatives that deliver efficiency gains to achieve the targets, makes sound economic and environmental sense. Such an approach will ensure society gets adequate 'bang for its buck' in relation to the investment of public funds in sustainability. It also ensures that programs can be designed to play a catalytic role in bringing about real, on the ground, outcomes.

If the Charter were to be based on qualitative aspirational themes rather than targets, it would not be effective. This is because the Charter would not deliver the necessary decision-making framework. In the comprehensive report, *Resetting the Compass*, Professor David Yencken and Debra Wilkinson make a clear case for a targeted approach in all spheres of governance:

> A government that is really serious about the achievement of a policy outcome needs to have a policy goal, needs to set targets for the achievement of the goal, needs to have a suite of measures which in its and others' best judgement will most likely achieve those targets, needs to regularly measure progress against those targets and needs to have very good feedback loops that allow adjustments to the policies and measures in the light of new information or other feedback. Setting targets is of special importance. …If there is no target, those responsible for a particular policy or set of measures have no obligation or pressure put upon them to achieve particular outcomes within any given time frame. There is a much reduced sense of urgency. A target, by contrast, is a signal that the government, organisation, policy maker or person in charge is serious…"[liii]

For these reasons, ACF recommends the inclusion of long term targets in a Sustainability Charter. The process of developing these targets should be informed by international, Australian experiences in setting targets across a range of policy applications.

7.2 International experience with target-setting

Since the 1992 Rio Earth Summit, sustainable development initiatives have proliferated. Many of these have developed targets and indicators at the local, regional and national levels. In December 2005, the UN funded *International Institute for Sustainable Development* (IISD) reported 669 entries on sustainable development indicator projects in its *Compendium of Sustainable Development Indicator Initiatives*. To date, this research is possibly the most ambitious database created to keep track of sustainable development indicator efforts.

The report found that while there are differences in the conceptual approach to sustainable development between sustainability indicator initiatives, there are also common factors relating to the success of the initiatives in delivering real outcomes. The international experience reported by the IISD shows that the setting of targets and associated indicators are key components in successful sustainable development strategies. This is because target setting at a national scale helps increase the policy relevance of sustainable development indicators. Sustainable development targets and indicators are therefore essential for the long term success of national sustainability strategies.

At the same time, a comprehensive national sustainability strategy which includes appropriate funding and institutional arrangements is needed to provide the broader policy context for any targets or indicators. (These arrangements are discussed in sections 8.0 and 9.0)

According to the international research conducted by the IISD there has been a trend for decision-makers to demand targets and indicators that have the following attributes:

- Appropriate in scale to the policy context (ie. local, regional, national)
- A small set that are indicative of the range of environmental problems
- Linked to policy targets
- Time-bound
- Compatible with macro-economic indicators and the budgeting process[liv]

Some of the frameworks most commonly used internationally for setting targets and indicators include the following:

- *The Pressure-State-Response (PSR) framework and its variations*. Current State of the Environment Reporting is a limited version of this model which could be extended to include measurable targets.
- *Issue- or theme-based frameworks*. These may include economic and social themes in addition to environmental themes. Targets and indicators are set for each theme. The themes may be comprehensive or based on the areas of most concern and, ideally, are tied together numerically.
- *The Human Wellbeing/ Ecological Wellbeing framework*. This combines social indicators such as health, education, income distribution, etc with environmental indicators. These indicators act as a proxy for 'wellbeing' or alternative measures of progress and growth to Gross Domestic Product (GDP).
- *Capital-accounting based frameworks*. Targets and indicators are centred on the economic and environmental components of sustainable development. For example, '[c]apital maintenance – which is extended to include, besides produced capital, non-produced natural assets, as well as human and social capital'[lv]

As a point of interest, an example of capital accounting is The United Nations System of Integrated Environmental and Economic Accounts (SEEA) (UN 1993, 2000; United Nationals et al. 2003). This focuses on the immediate interface between the environment and the economy. The conceptual and measurement problems of human and social capital, including changes in capital value, require further research before they can be fully included. Of course, for the theoretical and organisational purposes of indicator development, fully extended accounting categories could be used as a framework for sustainability assessment.[lvi] It is worth noting, however, that these frameworks can be flawed as they often require the setting of 'shadow prices' instead of real measures of biophysical attributes.

The Swedish model, referred to in the Inquiry discussion paper, is an example of a 'Pressure-State-Response' framework which focuses on selected sustainability themes. These themes and targets were developed through a combination of scientific assessment and community engagement. ACF supports the approach of the Swedish model as a best practice example of a National sustainability framework. The development of an Australian Sustainability Charter should be based on this approach yet adapted to Australia's unique environment and the values of the Australian community.

7.3 Australian experience with target-setting

In 2000, Prime Minister Howard recognised target-setting as vital to achieving a good return on public investment in Natural Resource Management (NRM) actions:

> [T]he lack of agreed specific on-the-ground outcomes and targets for water quality, salinity and other natural resource management attributes has been a major barrier to guaranteeing a return on the Commonwealth's investment. [lvii]

Some targets and indicators have already been developed for programs designed to deliver sustainability in Australia at the local, regional, state and national level. For example, A *National Framework for Natural Resource Management Standards and Targets* and the *National Objectives and Targets for Biodiversity Conservation2001-2005* [lviii]have been developed under the auspices of the Natural Resource Management Ministerial Council (NRMC).

However, the NRM Framework provides only aspirational, intangible goals for the nation. This and other framework documents list a number of 'matters for targets'. These are intended to guide regional NRM organisations in setting targets and making investment decisions, together with the roles of responsibilities of governments. Whilst this is a good initiative in itself, there is little or no reference to national NRM or ESD performance goals. [lix]

Even where national priority outcomes, objectives and actions are thoughtfully outlined in some detail (such as those agreed in 2001 for biodiversity conservation), [lx] they are non-binding. They are weakly backed-up by a schedule of reform, and supported by – at best - weak and indirect incentives. Moreover, there appear to be no formal mechanisms to review Governments' progress against agreed core outcomes.[lxi]

In addition, the targets set are largely focussed on the government *response* or *activity* rather than the environmental <u>*outcome*</u>. This means that the targets measure government activity (including policy development and program funding) rather than improvements in the actual environmental condition or pressure. Such an approach undermines the overall effectiveness of using targets and indicators to deliver on-the-ground change. This is because there is no explicit analysis of the effectiveness of a policy, or activity, in bringing about the outcome defined in the policy objective. Another disadvantage of this approach is that targets and indicators based on government activity tend

to be shorter term so they can be accommodated in government budget cycles. This does not deliver adequate long term guidance to deliver real on-the-ground change. ACF argues the need to track long term progress in relation to this initiative, and in relation to sustainability initiatives more broadly.

At its most recent meeting, the NRMC agreed to review these objectives and targets[lxii]. It will be informative to see whether this very short term target setting was successful in driving improved environmental condition or reducing environmental pressure. A detailed analysis of this program can be found in the *ACF Discussion Paper on Australia's Progress Towards Sustainable Landscape Management* prepared in July 2004. This program, along with the Natural Heritage Trust I experiment, clearly demonstrates the need for long term, outcome focussed, targets.

Lessons from previous programs have been incorporated into a number of national environment programs. The Action Plan for Salinity and Water Quality, and Natural Heritage Trust II, have placed more emphasis on the setting of regional plans through regional delivery agencies. [lxiii] While these regional targets are a prerequisite for funding of regional programs, they do not seem to translate into national targets, except in the broadest terms.

Some Australian States have also developed specific methods to measure certain aspects of environmental condition (eg. in Victoria, Habitat Hectares, Index of Stream Condition). Through development of the Australian Sustainability Charter, there will need to be a process, such as accreditation, to ensure either harmonisation or compatibility between methods.

The actions (ie. response) that governments, business and community will take (and are taking) to protect and restore the environment are important; they flag the pathways and reforms needed to achieve environmental sustainability. In the context of an Australian Sustainability Charter, these pathways should be identified separately or as subsets to the condition and response targets; they should not be outcomes in themselves. A revised government approach to setting targets also provides poptential to link to existing national environment programs such as the NHT or NAPWQS.

An Australian Sustainability Commission (discussed in the following section) should also play a key role in reviewing existing programs, regulatory approaches and fiscal programs. It should operate to ensure attainment of the objectives and targets outlined in the Charter. These review powers should not be limited to environment programs but should cover all parts of the economy and all of government.

7.4 Private sector experience with target-setting

The private sector demonstrates the effectiveness of target-setting generally, and also offers interesting case-studies for the use of targets to review and improve environmental impacts.

The business sector frequently uses targets and key performance indicators to drive continuous improvement in all facets of operations. While governments are subject to different drivers, targets are effective drivers for improved performance and for greater efficiency. Continuous measurement and reporting, using targets and indicators such as those set by the Global Reporting Initiative (GRI), across all business units, are the key to operational improvement for greater efficiency. [lxiv]

In the business context, the first step toward transforming any organisation is to develop a vision for future scenarios that the organisation may face[lxv]. It requires identifying current trends likely to influence the future as well as stakeholders. A key tool in this process is the use of stretch or long term targets which foster innovation - they motivate strategic planning to identify new business opportunities or new strategic partnerships.[lxvi]

A natural extension of business management practices is the use of targets to address the environmental impact of business operations. Whilst an Australian Sustainability Charter is far broader in scope, the private sector offers valuable insight into the use of targets to drive specific improvements in environmental performance. For example:

- ***DuPont – Science & Technology:*** In the mid-1990s, DuPont adopted an aggressive corporate energy policy that focussed on three areas: maximising energy efficiency; lowering the environmental impact of energy consumption; and renewing the company's power infrastructure. Targets included: 65% greenhouse gas reduction on 1990 levels by 2010; hold energy use constant at 1990 levels; source 10% of global energy from renewables.

  Du Pont has achieved a 67% reduction in greenhouse gas emissions since 1990, 9% reduction in energy use below 1990 levels (during 35% increase in production), 3% of energy from renewables. [lxvii]

- ***Lafarge –Cement:*** CO2 emissions from the cement sector account for 5% of the global total. Lafarge, operates in over 75 countries and is the largest cement manufacturer in the world. It has annual emissions in the region of 81 million tonnes, approximately twice the level of the

whole of Switzerland. In November 2001, Lafarge took the lead within the sector, introducing a target to cut emissions by 20% by 2010 against a 1990 baseline. Since 2001, LaFarge has achieved a 11% reduction in CO2 per unit of production since 1990[lxviii]

- ***Interface Carpets:*** In 1973, Interface's Founder and Chairman, Ray Anderson revolutionized the commercial floor covering industry by producing America's first free-lay carpet tiles. Today, Interface is the world leader in the design, production and sales of modular carpet, and a leading producer of broadloom carpet and commercial fabrics. Anderson himself that initiated the company's environmental mandate in 1994 when he gave Interface a new vision - to be "the first company that, by its deeds, shows the entire industrial world what sustainability is in all its dimensions: People, process, product, place and profits — by 2020 — and in doing so, to become restorative through the power of influence". With this in mind, Interface set specific targets that included the following:

    - Reduce US, GHG emissions by 15% per unit of production from 2001 to 2010;
    - Reduce non-renewable energy use per unit of production by 15% from 1996 levels by 2005 (target reviewed annually);
    - Increase renewable energy use to 10% of total energy use, by 2005 (target reviewed annually);
    - Become, by 2020, the first company to actively demonstrate sustainability (in all its dimensions) to the industrial world.

  Since 1992 Interface has achieved the following results:

    - 52% absolute reduction in C02 against the 1996 baseline to 2005;
    - 36% reduction in energy usage per unit of product manufactured on 1996 levels to 2005[lxix]

The use of target setting to drive improved environmental performance in the business sector demonstrates the effectiveness of measurable, outcome focussed and time bound targets. Targets guide organisational priorities across the full range of operations, and demonstrate a clear corporate commitment to reducing environmental impact. The achievement of progress towards these targets provides business with a credible platform to promote a commitment to Corporate Social Responsibility. While an Australian

Sustainability Charter will have broader scope than ESD measures in the business sector, many of these lessons of effective target setting are transferable to the national context.

7.5 Rising to the Challenge: Principled Targets

The experience of other jurisdictions in developing and using sustainability targets across a range of policy contexts provides a clear set of guiding principles for the development of effective targets for an Australian Sustainability Charter.

The Swedish model, which represents international best practice, should be adapted to Australia's unique environment and the values of the Australian community through a process of public engagement. The Australian Sustainability Charter should articulate a national commitment to achieve a sustainable Australia within one generation, and set measurable, time-bound targets across a range of environmental themes to achieve this goal. Targets should be independently developed and monitored using the best available science.

As a central principle, the targets for an Australian Sustainability Charter should focus on environmental condition and environmental pressure indicators, rather than government response indicators. While response indicators are important features of many intergovernmental agreements in Australia (i.e. National Water Initiative, Natural Heritage Trust), there is a tendency to focus on response-based targets that fall into 'activity' and/or 'administrative' traps. This leads to the situation where the delivery or achievement of actual changes to bio-physical condition and/or pressure is neglected.

In addition to these central principles, ACF recommends that the Australian Sustainability Charter include targets which fulfil the following criteria:

- Appropriate in scale to the policy context (ie. local, regional, national);
- Represent a concise set of themes that are indicative of the range of environmental problems;
- Linked to policy targets that include international obligations;
- Time-bound and incorporate physical laws of thermodynamics and mass balance;

- Compatible with macro-economic indicators and the budgeting process[lxx];
- Developed with broad community consultation and expert analysis;
- Based on the best available science and includes full lifecycle impacts and embodied inputs;
- Independent and inter-related with key economic and social indicators;
- Fair and just;
- Backed up with funding and institutional arrangements.

These target-setting principles are further explored through ACF's response to specific questions tabled in the Inquiry discussion paper – in particular, how the principles outlined above should be applied in the development of an Australian Sustainability Charter. (Please note: The ACF response to the full set of questions is attached in Appendix 2.0)

7.51 Principles and targets as they relate to Inquiry questions

Should a sustainability charter consist of aspirational statements, set targets (such as measurable water quality) or both?

An Australian Sustainability Charter should include the aspiration to achieve a sustainable Australia within one generation *and* a concise set of time-bound, measureable targets based on the best available science.

Can existing standards (such as the Water Efficiency Labelling and Standards (WELS) Scheme be applied to the Sustainability Charter? What are they?

Existing standards and labelling schemes, along with other policies and market mechanisms should be considered pathways to achieving the Sustainability Charter rather than part of the Charter itself.

The Charter should describe the outcome that needs to be achieved in terms of reduced impact on the Australian environment, rather than government activities. Policies, programs and market mechanisms can then be developed to deliver the fairest and most cost-effective pathway to achieve the sustainability targets outlined in the Charter.

Can the charter be framed in such a way to ensure that it can be integrated into all levels of government decision making?

Integration across portfolios, and with international obligations and other jurisdictions will be facilitated if the Sustainability Charter and its targets are based on the environmental outcomes to be achieved. This is because setting targets in terms of the outcome to be achieved allows for a variety of policy responses to achieve the outcome. In many cases, this will allow for policies and programs that are regionally appropriate.

A range of information and decision support tools should be developed. These should be backed-up by a quantitative framework where (in a statistical sense) targets can be seen and measured at the level of local government areas (or equivalent), Suburb, City, State, Nation, and also compared to current real levels of activity.

Could a sustainability Charter be incorporated into national State of the Environment Reporting?

As discussed, State of the Environment Reporting has limited policy application because it is a limited monitoring regime. The Australian Sustainability Charter should be developed as the overarching policy framework, supported by effective institutional arrangements. It should articulate a national commitment to delivering a sustainable Australia within one generation. State of the Environment Reporting could be extended to support the monitoring of sustainability targets within the Australian Sustainability Charter; however the targets themselves should be developed independent of Government and, unlike State of the Environment Reporting, they should be quantitative.

What objectives are applicable to the built environment? How would these be measured? How should we rate the sustainability of existing building infrastructure? Could a measurement or level of retro-fitting achieve this? How would we measure levels of retrofitting? Can existing building standards, such as the 5 star rating system, be incorporated into the Sustainability Charter?

The Australian Sustainability Charter should set targets for the reduction of greenhouse gas emissions, water use, the protection of biodiversity, resource efficiency, and other critical issues previously discussed in this submission.

These measures are all relevant to the built environment where many opportunities exist for efficiency gains and reduced environmental impact.

The Australian Sustainability Charter should not, however, set targets based on government or business activities such as a level of infrastructure investment, retro-fitting, or building standards (such as 5 star energy efficiency). Instead, these should be considered pathways to achieving targets based on greenhouse gas reductions, water and resource efficiency. The Australian Sustainability Charter should provide a framework for considering a broad range of measures to achieve these outcomes rather than prescribing the measures themselves. Existing government commitments at the Federal or State level may form the basis for developing measures to achieve the targets outlined in the Australian Sustainability Charter – along with innovative solutions yet to be developed.

How do we judge the efficiency of transport systems? What transport infrastructure measures will reduce private transport needs? How do we measure these?

ACF proposes sustainable transport as a specific objective within the Australian Sustainability Charter. Following the same outcome based approach, targets to reduce the environmental impact of transport systems and infrastructure should be set and the solutions should be invited rather than prescribed.

The sustainability of transport systems and infrastructure involves a number of interactive components including the number of trips taken, distance travelled, transport mode, and the efficiency of that mode. One way of measuring the efficiency of transport systems would be to measure the greenhouse gas emissions per kilometre travelled and to set targets to improve this. Such a measure would integrate the various components of transport system design. Greenhouse gas emissions can be a useful proxy for air pollution indices from motor vehicles.

Once again, the Australian Sustainability Charter is based on a specific environmental outcome which could invite a range of solutions. These solutions (or pathways) might include incentives for greenhouse efficient vehicles, fuel efficiency standards, investment in transport modes with lower greenhouse gas emissions per kilometre, and planning that better integrates public transport, walking and cycling. It is important to differentiate between outcome-based objectives (with their integrated targets) and the pathways that help achieve the vision articulated by the objectives / targets.

7.52 Toward a Sustainability Charter

To reiterate, and with consideration of the principles outlined above (and extrapolated in response to the Inquiry's questions), the Australian Sustainability Charter should set targets that aim to deliver long-term objectives. As previously discussed, ACF proposed the following headline objectives as the foundation for an Australian Sustainability Charter that promotes real, on-the-ground change:

1. Stop dangerous climate change
2. Secure water for all life
3. Protect and conserve biodiversity
4. Restore our land
5. Ensure clean air
6. Eliminate toxins from our environment
7. Minimise waste
8. Use our resources wisely
9. Reduce our environmental footprint
10. Make transport sustainable

In order for Charter objectives and targets to be 'made real', they require government leadership, and an accompanying framework of institutional arrangements. These 'operational agents' are best determined via due consideration of the lessons derived from related experience with Ecologically Sustainable Development (ESD).

8.0 LESSONS FOR CHARTER DEVELOPMENT

The effectiveness of Ecologically Sustainable Development (ESD) is contingent not only on strategic foresight, but on the capacity of sustainability agents to fulfil their roles through appropriate policy, legislative and organisational support. Australia's on-the-ground track-record in far-reaching ESD initiatives has been sketchy, at best. With deliberation over a prospective Sustainability Charter, Australia has the opportunity to learn from previous ESD experience – both locally and internationally.

8.1 Insights from International ESD Experience

In 2005 the International Institute for Sustainable Development (IISD) undertook a collaborative research project to investigate Sustainable Development (SD) actions at the national level in 19 countries. The purpose was to identify key innovations, challenges and lessons learned in the development, participation, implementation, monitoring and adaptation of national SD strategies. Preliminary case study research highlighted a number of conclusions:

- Four main types of national SD strategies have been pursued:
    1. comprehensive and multi-dimensional (e.g. Germany);
    2. cross-sectoral (e.g. Cameroon);
    3. sectoral (e.g. Canada);
    4. integrated SD within existing planning processes (e.g. Mexico).

  In many countries, the type of strategy pursued was simply the path of least political resistance. In other nations, the strategy choice was dictated by capacity constraints and/or self-learning;

- National SD strategies still operate at the periphery of national budgeting processes;

- Sectoral and cross-sectoral strategies are still caught in "the administrative trap"[1] and need to make co-ordination as sophisticated as the SD problems being addressed;

- National strategies seldom link to local SD strategies and, therefore, often fail to leverage progress and the self organizing capacity at the local level;

- National SD strategies must apply systems thinking—to greatly improve understanding of the integration between economic, social and environmental systems;

- Public participation approaches have progressed considerably since the 1992 Rio Earth Summit. However, significant challenges remain in terms of building trust among stakeholders, providing sufficient time for the participatory process, and strengthening the capacity of civil society in developing countries;

[1] "The administrative trap" – government administrative structures organised vertically into sectoral, or functional, ministries and departments. This works reasonably well until the system encounters a problem of very broad and highly integrated nature, such as desertification. Then it tackles the parts which are identifiable to each ministry and then each ministry tackles the symptom as problem in, and of, itself.

- The implementation of national SD strategies and specific policy initiatives often suffers from a lack of central co-ordination in terms of monitoring progress;
- While a mix of specific policy initiatives is used by most nations, the use of economic policy initiatives (market-based instruments) appears to still be in its infancy. Countries lagging in this regard could learn from the innovators in this field, such as Sweden.
- A clear need exists for more innovation and learning to complete the strategic management cycle for national SD strategies and specific initiatives. [lxxi]

International experience provides an interesting point of reference for the development of an Australian Sustainability Charter. Even more significantly, however, Australia's own experience with ESD offers valuable insight that should be used to ensure the Charter achieves its aims.

8.2 The Highs and Lows of Australia's ESD Experience

Lessons learned within the international arena were reflected in the Australian National Strategy for Ecologically Sustainable Development (NSESD) initiated under the Hawke Labor government in the late 1980's (but later dropped by the Keating Labor Government). The NSESD was closely tied to the United Nations Conference on Environment and Development (UNCED) process and Agenda 21. Despite its potential, however, the NSESD did not achieve the traction to ensure its effectiveness.

Two official implementation reports, for 1993 and 1993-1995, detailed the limited success of the NSESD. The strategy's success (or impacts) are largely confined to the incorporation of Ecologically Sustainable Development (ESD) principles within government and industry rather than specific environmental benefits [lxxii]. The 1999 Productivity Commission inquiry into the adoption of ESD within government found that implementation had been sporadic and in some departments had not occurred at all[lxxiii]. Some observers note, however, that whilst ESD's impact on decision-making remains limited, a key benefit of the NSESD process is its contribution to wide-spread use of ESD language in policies, programs and laws.[lxxiv]

In combination, both international experience and the Australian NSESD process highlight a number of key lessons. These lessons need to be considered in the development of an Australian Sustainability Charter:

- an institutional or organisational mechanism to carry forward ESD and which can drive implementation across sectors and jurisdictions;
- clear time bound targets and indicators to measure success or progress towards goals [lxxv] at both a local, state and national level;
- funding to ensure that strategies are put in place and that initiatives are established to compel effective follow-through of these[lxxvi];
- broadly focussed analytical and institutional processes to deal with complex and inter-sectoral issues;
- appropriate implementation resources and uses, and a mix of policy instruments that include economic instruments or initiatives;
- well-resourced institutions which encourage stakeholder engagement and communication and build trust amongst stakeholders.

If an Australian Sustainability Charter is to achieve its end, these lessons must be integrated; they are pivotal to the Charter's success. They are not, however, the only lessons to be learnt - the case of National Productivity Reform also offers valuable insight to inform the development of an Australian Sustainability Charter.

8.3 Lessons from National Productivity Reform

Unlike the National ESD process, productivity reforms have been widely regarded as successful in achieving their goal (ie. at driving economic reform). On 14 April 2005, the Productivity Commission released its final report on the Review of National Competition Policy [lxxvii]. The Productivity Commission has highlighted the economic benefits of National Competition Policy. They calculated that since the early 1980s, when micro-economic reform began, multi-factor productivity (measured as the efficiency with which labour and capital are used in the formal economy) grew at more than double the rate of the previous economic cycle.

It is also worth noting that national debate on productivity and economic reform has so far been confined to the following:

- labour productivity enhancements (through labour market/industrial relations reforms, taxation policy reforms, welfare reforms);
- regulatory reform (reform of local, state and federal approval mechanisms, financial regulations etc);

- public and private investment in infrastructure;
- pricing effects, particularly for energy sources (including fuels);
- efficiencies through enhanced Federal-State institutional arrangements (and including harmonisation of regulation and policy);
- enhancement and further implementation of National Competition Policy;
- skill and knowledge creation and retention (employer and employee incentives; taxation reform; innovation policy; investment in, increased standards and availability of education and training; reforms to higher education).

The Productivity Commission also concluded that National Competition Policy may result in adverse effects on the environment. In particular, the Commission referred to the following: '…higher greenhouse gas emissions associated with reform-related increases in demand for electricity.'

The Commission acknowledges that 'negative impacts [on the environment] are intrinsic to [productivity] reform' but that there are 'provisions designed to address them. Thus, public interest tests to help ensure that the benefits of particular reforms outweigh the costs are an integral part of National Competition Policy'.

The National Competition Council has concluded that the success of National Competition Policy can be attributed to the fact that it involved the following:

- an agenda agreed by all governments up-front that outlined the reform commitments with a practical degree of specificity;
- the establishment of an independent body to monitor and report on reforms;
- the provision of appropriate incentives for States and Territories to undertake reform.

ACF believes that any future approach to productivity reform must be designed to simultaneously achieve Australia's environmental objectives with our economic objectives within a framework of sustainability.

The benefits of the COAG National Productivity Reform approach for environmental and sustainability issues is discussed in detail in the ACF document, *Greening the Australian Federation: A proposal for national institutional reform to promote environmental sustainability across Australia* (Wells, 2004).

The institutional arrangements identified in this document are based in particular on the following:

- The need to address geographic scales with institutions which can cross political and administrative boundaries;
- The need to address time scales with institutions which can provide certainty and longevity;
- The need for political acceptance of the proposal within government;
- The need for sufficient resources and appropriate analytical frameworks.

Productivity reforms that have occurred in Australia since 1983 have largely been focussed on increasing the efficiency of labour and capital, with scant attention to the opportunity to drive productivity increases through reforms to the efficiency of resource use. This is partly a function of how productivity is usually measured at the macro-economic scale, where productivity is viewed as only a function of labour and capital (value-added multifactor productivity). The qualitative aspects of the various factors that determine productivity are also not included in standard measures. These tend to focus attention on labour and capital amounts. Until more accurate measures of productivity are used, resource efficiency will continue to be neglected, and policies will continue on a path toward negative environmental outcomes.

While there has never been a national assessment of the potential value of resource productivity reform for Australia, the few studies available point to massive untapped opportunities. There is also a wealth of practical examples of how resource efficiency can lead to increased productivity at the level of the firm. With this in mind, ACF urges the Inquiry to consider avenues for investigating resource efficiency within the Australian context.

9.0 INSTITUTIONAL SUPPORT FOR A SUSTAINABILITY CHARTER

ACF's response to the Inquiry into a Sustainability Charter highlights the opportunities for positive change within the context of developing and implementing an Australian Sustainability Charter. At the heart of ACF's submission is the argument for a collaboratively developed Charter that integrates time-bound targets which measure improvements in environmental condition and pressure. A Charter document that supports an authentic vision for a sustainable Australia is, however, only part of the

Charter story. Recognising this, ACF argues for the creation and empowerment of institutional arrangements essential to the Charter's success beyond the page.

9.1 Proposed Institutional Arrangements

ACF recommends sustainability reform to drive greater resource efficiency and address the significant environment issues which face Australia. Such reform is manifest not only in the written documents which articulate targets and pathways, but in the institutional and analytical arrangements that give these documents 'life'. ACF proposes a powerful institutional model – one that is broadly consistent with models recommended to Federal Government by the House of Representatives Standing Committee on Environment and Heritage, Inquiry into Sustainable Cities (see Attachment 3).

These reforms should not be limited to cities: they should be national and economy-wide in their scope. They should also be coupled with the following factors and redress the key drivers of environmental degradation:

- national targets which are biophysical outcome-focused and time-bound;
- the development of a national resource productivity model to be used to benchmark and assess performance in the achievement of resource productivity;
- a new outcome-based approach to incentive payments for States and Territories linked to the achievement of national sustainability targets;
- a national approach to pricing reforms that will ensure a transition to pricing regimes that reflect environmental externalities;
- a national approach to the elimination of harmful subsidies that affect the environment;
- a commitment to independent system of national policy and program investigation and review;
- new arrangements for major commonwealth investment - i.e. Future Fund - to ensure that major gains in resource efficiency do not create perverse environmental effects.

There is also potential to link specific national programs to this model, which may be either place-based (eg. Natural Heritage Trust), regional delivery or theme based (eg. National Action Plan for Salinity and Water Quality).

The review of the Productivity Commission Inquiry on National Competition Policy concluded this key point: linking a system of payments to the States and Territories in exchange for the completion of reforms proved successful and there is value in continuing with this approach.

9.2 The National Sustainability Commission

The 2005 *Sustainable Cities* report recommended that an Australian Sustainability Charter be appropriately supported through an independent Sustainability Commission. ACF supports this recommendation whole-heartedly, and offers a range of comments regarding the role and responsibilities of such a Commission.

Further to the *Sustainable Cities* report, ACF believes that the Australian Sustainability Commission should be responsible for investigating, developing and reviewing national policy programs to achieve resource productivity and specific national environmental/sustainability outcomes. These policy programs would then provide national mechanisms to help achieve the Australian Sustainability Charter.

As discussed in this submission, the Charter's objectives and targets should be established independent of government. ACF believes this should be one of the first tasks of an Australian Sustainability Commission. The Commission should then be responsible for regular report-backs to both Parliament and COAG on national progress toward Charter fulfilment.

ACF also believes that the Commission should monitor up-front payments to States and Territories by the Commonwealth to support the implementation of Sustainability & Resource Productivity Plans (SRPP). These Plans should outline how each State and Territory intends to contribute to the achievement of national targets (ie. through investment in infrastructure, programs and institutional reforms). This has the advantage of leaving the means of achieving national targets largely to the States and Territories (which could also be further scaled down to regional, catchments or local *scales* with associated incentive or program payments); however, Sustainability & Resource Productivity Plans should be negotiated between the States and the Commonwealth upon the advice of the National Sustainability Commission to ensure national consistency.

ACF therefore supports an outcomes-based approach to the use of incentive payments - a model that would require States and Territories to submit Sustainability & Resource Productivity Plans (SRPP) through COAG to the

Australian Sustainability Commission. Incentives should be paid when States and Territories achieve specific resource productivity outcomes (as per the assessment of the Australian Sustainability Commission).

An Australian Sustainability Commission could also establish specific capacity-building programs to assist and facilitate regional or local action towards sustainability. This would enhance opportunities to strengthen local communities and their ability to self-organise around sustainability and environment issues.

ACF believes the Commission should have a minimum of three Commissioners, with relevant backgrounds in environmental management, ecological science, and environmental and / or sustainability policy.

9.3 Australian Sustainability Charter Operational Model

ACF recommends consideration of an operational model that incorporates identified agents, dynamics and influences relevant to the translation of an Australian Sustainability Charter into 'on-the-ground' transformation. This is best expressed visually, as per the model in Attachment 3.

10.0 CONCLUSION

ACF strongly supports the development of an Australian Sustainability Charter – in particular, a Charter that pursues a sustainable Australia within one generation (ie. 25 years). The diverse needs which must be reflected in an Australian Sustainability Charter highlight the need for cross-sectoral participation in its creation. The Charter must also, by necessity, incorporate clear and comprehensive objectives. These headline objectives should address the critical issues that currently affect the Australian environment and, consequently, the Australian economy and society. Realisation of these objectives must be pinned against time-bound biophysical targets which measure improvements in environmental pressure and condition.

Pathways (or actions / responses) toward sustainability must be acknowledged separately. These should not form the foundation of the Charter itself but, rather, should be articulated as vehicles for change, the support mechanisms that empower the Charter to be 'lived' beyond the page. This requirement is highlighted in the lessons of previous international and Australian experience with ESD – for example, the need to establish

appropriate institutional arrangements, such as an independent Australian Sustainability Commission, to ensure delivery of the Charter's agreed outcomes.

National leadership, participation, strategic foresight and scientific rigor are all crucial to Charter development. Combined, these elements ensure a firm commitment to sustainability, such that an Australian Sustainability Charter can strive toward real 'on-the-ground' success.

In response to the Inquiry into a Sustainability Charter, ACF offers a range of recommendations, and commends the Inquiry as an important step on the road to a better future for all Australians. ACF congratulates the Standing Committee on this much needed undertaking, and looks forward to further participating in the process of creating an Australian Sustainability Charter.

11.0 SUMMARY OF RECOMMENDATIONS

Supporting the development of an effective Australian Sustainability Charter, ACF requests that the Standing Committee on Environment and Heritage consider the following recommendations:

1. ACF urges the Inquiry to consider processes of efficient and meaningful community engagement

2. ACF recommends that a process of Indigenous participation be developed (in consultation with Indigenous peoples themselves) that demonstrates robustness against key attributes.

3. ACF recommends that the scope and goals of the Australian Sustainability Charter should be expressed through *both* aspirational and tangible measures.

4. ACF supports a Charter that operates within the timeframe of 25 years – 50 years (a single generation). This provides opportunities to develop shorter term or interim indicators, and to promote progress toward sustainability that benefits existing and future generations of Australians.

5. ACF asserts that the Australian Sustainability Charter should include a set of clearly articulated headline (or thematic) objectives. ACF recommends the following objectives:

1. Stop dangerous climate change
2. Secure water for all life
3. Protect and conserve biodiversity
4. Restore our land
5. Ensure clean air
6. Eliminate toxins in our environment
7. Minimise waste
8. Use our resources wisely
9. Reduce our environmental footprint
10. Make transport sustainable

1.6 ACF recommends that the Australian Sustainability Charter include time-bound biophysical targets that respond to the above objectives. Such targets should fulfil the following criteria:

- Targets should be appropriate in scale to the policy context (ie. local, regional, national);
- Targets should represent a concise set of themes that are indicative of the range of environmental problems;
- Targets should be linked to policy targets including international obligations;
- Targets should be time-bound and they should incorporate the physical laws of thermodynamics and mass balance;
- Targets should be compatible with appropriate macro-economic indicators and the budgeting process[lxxviii];
- Targets should be developed with broad community consultation and expert analysis;
- Targets should be based on the best available science;
- Targets should be independent and inter-related with key economic and social indicators;
- Targets should be fair and just;
- Targets should be backed up with funding and institutional arrangements.

1.8 ACF recommends that the Charter and associated institutional reforms should be national and economy-wide in their scope. The Charter should focus on the key drivers of environmental degradation, and should be coupled with the following factors:

- national targets which are biophysical outcome-focused and time-bound within 25 - 50 years;
- the development of a national resource productivity model to be used to benchmark and assess performance in the achievement of resource productivity;
- a new outcome-based approach to incentive payments for States and Territories linked to the achievement of national sustainability targets;

- a national approach to pricing reforms that will ensure a transition to pricing regimes that reflect environmental externalities;
- a national approach to the elimination of harmful subsidies that affect the environment;
- a commitment to an independent system of national policy and program investigation and review (eg. Australian Sustainability Commission);
- new arrangements for major commonwealth investment - i.e. future fund - to ensure that major gains in resource efficiency do not create perverse environmental effects.

1.9 ACF strongly recommends that any future approach to productivity reform must be designed to simultaneously achieve Australia's environmental objectives with our economic objectives and thereby operate within a legitimate framework of sustainability.

ATTACHMENT 1: **Defining Environmental Pressure / Condition / Response**

The OECD defines pressure, state and response as follows:

Environmental pressures describe pressures from human activities exerted on the environment, including natural resources. "Pressures" here cover underlying or indirect pressures (i.e. human activities themselves and trends and patterns of environmental significance) as well as proximate or direct pressures (i.e. the use of resources and the discharge of pollutants and waste materials). Indicators of environmental pressures are closely related to production and consumption patterns; they often reflect emission or resource use intensities, along with related trends and changes over a given period. They can be used to show progress in decoupling economic activities from related environmental pressures, or in meeting national objectives and international commitments (e.g. emission reduction targets).

Environmental conditions relate to the quality of the environment and the quality and quantity of natural resources. As such they reflect the ultimate objective of environmental policies. Indicators of environmental conditions are designed to give an overview of the situation (the state) concerning the environment and its development over time. Examples of indicators of environmental conditions are: concentration of pollutants in environmental media, exceeding of critical loads, population exposure to certain levels of pollution or degraded environmental quality and related effects on health, the status of wildlife and ecosystems and of natural resource stocks.

Societal responses show the extent to which society responds to environmental concerns. They refer to individual and collective actions and reactions, and are typically intended to achieve the following goals:

- mitigate, adapt to or prevent human-induced negative effects on the environment;
- halt or reverse environmental damage already inflicted;
- preserve and conserve nature and natural resources.

Examples of indicators of societal responses are environmental expenditure, environment-related taxes and subsidies, price structures, market shares of environmentally friendly goods and services, pollution abatement rates, waste recycling rates, enforcement and compliance activities. In practice, indicators mostly relate to abatement and control measures; those showing preventive and integrative measures and actions are more difficult to obtain.

Source: OECD 2003[lxxix]

ATTACHMENT 2: **Response to Questions in the Inquiry Discussion Paper**

The Inquiry discussion paper presents a series of questions relating to the development of a Sustainability Charter. Our response to these questions illustrates how the principles described in this submission should be applied in the development of an Australian Sustainability Charter.

Should a sustainability charter consist of aspirational statements, set targets (such as measurable water quality) or both?

The sustainability charter should include the aspiration to achieve a sustainable Australia within one generation *and* a concise set of time bound, measurable targets based on the best available science.

The targets should be designed to deliver the long term objectives described in the Australian Sustainability Charter. ACF proposes the following ten objectives:

- Stop dangerous climate change
- Secure water for all life
- Protect and conserve biodiversity
- Restore our land
- Ensure clean air
- Eliminate toxins from our environment
- Minimise waste
- Use our resources wisely
- Reduce our environmental footprint
- Make transport sustainable

However, targets for each of these objectives will not deliver the required government leadership without an accompanying policy framework and institutional arrangements to achieve them.

What research will be needed to develop and support the Sustainability Charter?

The Sustainability Charter should be developed with the best available science to determine the targets to achieve a Sustainable Australia. Research will be needed in each of the objective areas to determine the current status of Australia's environment, projected trends and the scale of improvement needed to deliver a sustainable outcome. Existing research programs at the CSIRO provide a basis from which the Australian Sustainability Charter can be developed with additional funding.

In relation to the policies or programs to deliver the Australian Sustainability Charter, significant research will be needed to develop criteria to ensure that the proposed projects will achieve real outcomes. Such an approach will also encourage innovation and research from project proponents.

Can existing standards (such as the Water Efficiency Labelling and Standards (WELS) Scheme be applied to the Sustainability Charter? What are they?

Existing standards and labelling schemes, along with other policies and market mechanisms should be considered pathways to help achieve the Sustainability Charter, rather than part of the Charter itself.

The Charter should describe the outcome that needs to be achieved in terms of reduced impact on the Australian environment rather than government activities. Policies, programs and market mechanisms can then be developed to deliver the fairest and most cost-effective pathway to achieve the sustainability targets outlined in the Charter.

Can the Charter be framed in such a way to ensure that it can be integrated into all levels of government decision-making?

Integration across portfolios, and with international obligations and various jurisdictions is possible if the Charter focuses on the environmental outcomes to be achieved. This is because setting outcome-focussed targets allows for a variety of policy responses to achieve the outcome. In many cases, this will allow for policies and programs that are regionally appropriate.

Will there be a cost/gain to the economy by introducing the targets?

If the Charter is delivered with real commitment, it has the potential to provide long term certainty to investors in a number of 'sunrise' industries such as energy efficiency, bio-fuels, and renewable energy. As the outcomes are achieved, the Charter will ensure the long term resilience of the many sectors of the Australian economy that are vulnerable to environmental impact - such as agriculture, tourism, infrastructure, health, and insurance.

Because the targets should describe the sustainable outcome, rather than the work program to deliver the outcome, the targets themselves are neutral in economic terms. Each proposed policy or program should be assessed in accordance with the COAG Policy Making Guidelines to determine the most cost-effective way to deliver socially responsible environmental outcomes.

Could a sustainability charter be incorporated into national State of the Environment Reporting?

State of the Environment Reporting has limited policy application because it is a limited monitoring regime. The Sustainability Charter should be developed as the overarching policy framework, backed up by effective institutional arrangements. It should articulate a national commitment to delivering a Sustainable Australia. State of the Environment Reporting could be extended to support the monitoring of sustainability targets within the Sustainability Charter; however, the targets themselves should be developed independent of Government and, unlike State of the Environment Reporting, the targets should be quantitative.

Is National Competition Policy a good template for consideration of incentive payments for sustainable outcomes?

The National Competition Council has concluded that the success of National Competition Policy can be attributed to the fact that it involved:

- An agenda agreed by all governments that outlined the reform commitments with a practical degree of specificity;
- The establishment of an independent body to monitor and report on reforms;
- The provision of appropriate incentives for States and Territories to undertake reform.

ACF is strongly of the view that any future approach to productivity reform must be designed to simultaneously achieve Australia's environmental objectives with our economic objectives within a framework of sustainability. To that extent, National Competition Policy is a good template for the consideration of incentive payments for sustainable outcomes.

How should payments be awarded under the Sustainability Charter?

ACF supports an outcomes-based approach to the use of incentive payments to deliver a sustainable Australia within one generation. ACF supports a model whereby States and Territories would be required to submit Sustainability & Resource Productivity Plans (SRPP) through COAG to the National Sustainability Commission. These plans would outline how each State and Territory intends to contribute to the achievement of national targets outlined in the Sustainability Charter. Sustainability & Resource Productivity Plans should be negotiated between States and the Commonwealth upon the advice of the National Sustainability Commission to ensure national consistency and an outcomes-based approach. Further details of the proposed model are discussed in the body of the submission (see pages 53-54).

Is it possible to measure cultural and social values in relation to a Sustainability Charter?

ACF's response to this question treats 'cultural and social values in relation to a Sustainability Charter' as reference to values-based behavioural change toward environmental sustainability. From this perspective, it is possible to measure cultural and social values if sufficient resources are committed to the overall program.

For the purpose of ascertaining value-shifts in relation to sustainable household and commercial activities, baseline research at the beginning and conclusion of the Charter development process may prove worthwhile. Valid information on cultural and social values can prove useful in strategic development of sustainability initiatives – from government to community programs. This is due, in part, to the fact that social change for sustainability is values-based.

The on-the-ground effectiveness of measuring cultural and social values toward environmental sustainability is contingent on adequate funding and appropriate timeframes for public roll-out. Widespread community and

industry engagement (amongst a diversely representative sample of the Australian population) is necessary. The associated communication strategy would be resource-intensive – especially in terms of time and money. To adequately determine shifts in values in relation to a national sustainability program, such investment is essential.

The Built Environment

What objectives are applicable to the built environment? How would these be measured? How should we rate the sustainability of existing building infrastructure? Could a measurement of level of retro-fitting achieve this? How would we measure levels of retrofitting? Can existing building standards, such as the 5 star rating system, be incorporated into the Sustainability Charter?

The Australian Sustainability Charter should set targets for the reduction of greenhouse gas emissions, water use, the protection of biodiversity, resource efficiency, and other critical issues previously discussed in this submission. These measures are all relevant to the built environment where many opportunities exist for efficiency gains and reduced environmental impact. The Australian Sustainability Charter should not, however, set targets based on government or business activities such as a level of infrastructure investment, retro-fitting, or building standards (such as 5 star energy efficiency). Instead, these should be considered pathways to achieving targets based on greenhouse gas reductions, water and resource efficiency. The Australian Sustainability Charter should provide a framework for considering a broad range of measures to achieve these outcomes rather than prescribing the measures themselves. Existing government commitments at the Federal or State level may form the basis for developing measures to achieve the targets outlined in the Australian Sustainability Charter – along with innovative solutions yet to be developed.

Do we need to protect heritage buildings as part of the Sustainability Charter?

Australia has a rich cultural heritage that needs to be taken into account. This includes the cultural heritage of both buildings and the natural environment. It also includes the cultural heritage of Australia's Indigenous people. Each of these must be recognised within an Australian Sustainability Charter.

The specific protection of heritage buildings will depend on the nature of the projects proposed to achieve the outcomes in the Sustainability Charter. Each proposed project should take into account the most cost effective way of

delivering socially responsible environmental outcomes. Heritage should be protected as part of the socially responsible criteria for assessing projects to deliver the outcomes articulated in the Australian Sustainability Charter.

Water

How should water quality be measured? Should targets be focussed on reducing water consumption, increasing water re-use, or both? How can we measure the health of water catchment areas?

Water quality, water consumption, and the health of water catchment areas should be measured using the best available science. Much of this research has already been done by various Government departments and research institutes. However, a national approach to regionally appropriate targets is needed for both our urban and rural areas. Targets should focus on each aspect of the water cycle. These include catchment-specific river health, efficiency of water infrastructure, efficiency of end-use applications and degree of re-use, impact of waste water or water treatment, and stormwater.

Energy

How should we measure the use of renewable energy? How do we encourage an increase in renewable energy use?

The measurement of renewable energy is straight forward. There are a range of policies and programs that can encourage an increase of renewable energy use such as the Federal Government's Mandatory Renewable Energy Target (MRET), Photovoltaic Rebate, or its Solar Cities Program. The Australian Sustainability Charter should be based on targets to reduce greenhouse reductions. These may include sub-targets to increase the use of renewable energy, improve energy efficiency, and encourage fuel switching and the like. However, the Charter should encourage a range of innovative policy solutions to achieve the targets rather than prescribe the policy solutions themselves.

Can we measure the awareness of the environmental, economic and social benefits of energy efficiency and renewable energy?

The Australian Sustainability Charter should deliver real on-the-ground outcomes. Awareness of the environmental, economic and social benefits of energy efficiency and renewable energy may be measured as part of an

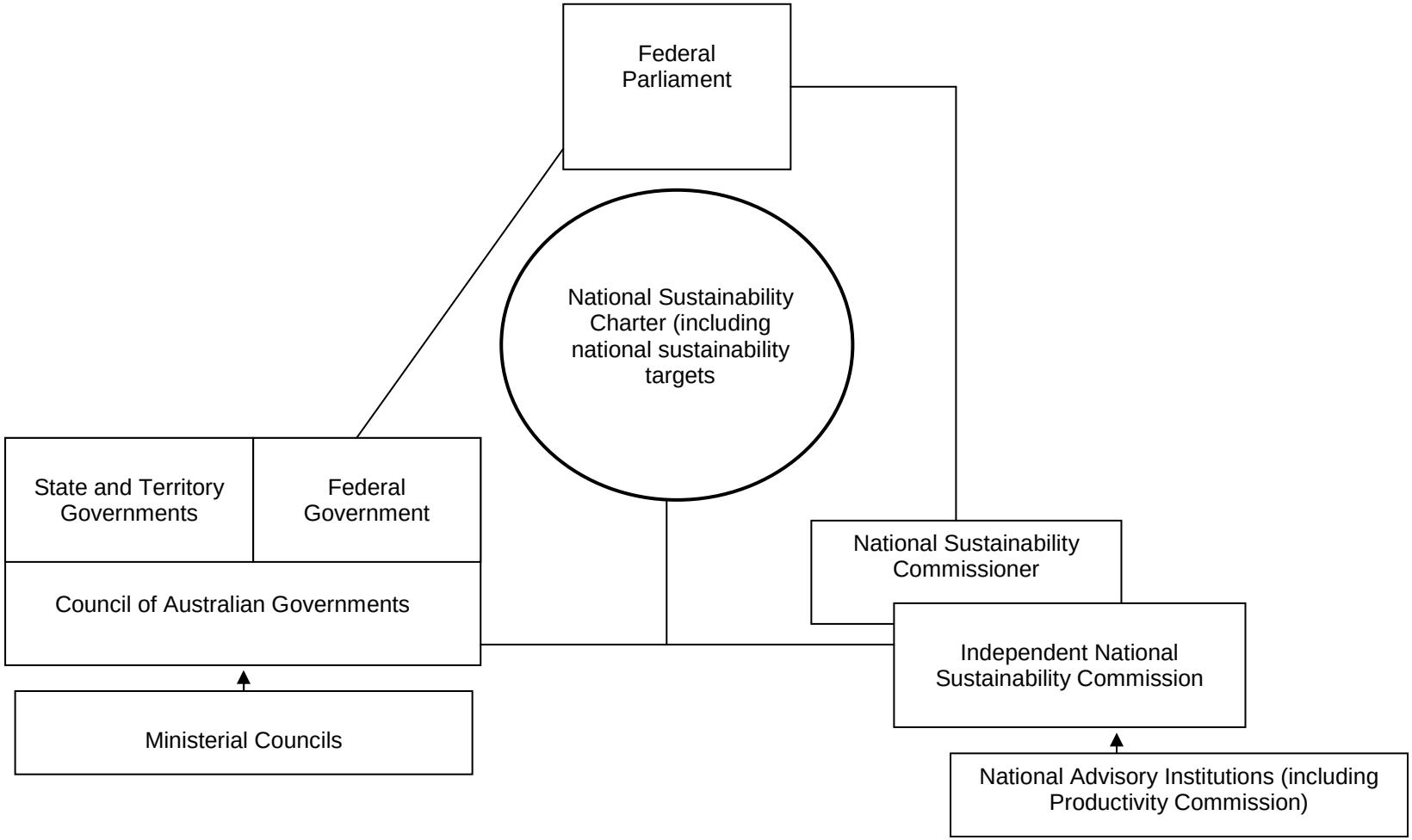
education or industry training program. However, this should be considered part of a program of evaluation to assess the likelihood of a proposal to deliver real environmental outcomes. Awareness is a pathway to delivering sustainable outcomes; it should not be considered part of the Australian Sustainability Charter itself.

Transport

How do we judge the efficiency of transport systems? What transport infrastructure measures will reduce private transport needs? How do we measure these?

ACF proposes sustainable transport as a specific objective within the Australian Sustainability Charter. Following the same outcome based approach, targets to reduce the environmental impact of transport systems and infrastructure should be set and the solutions should be invited rather than prescribed. The sustainability of transport systems and infrastructure involves a number of interactive components including the number of trips taken, distance travelled, transport mode, and the efficiency of that mode. One way of measuring the efficiency of transport systems would be to measure the greenhouse gas emissions per kilometre travelled and to set targets to improve this. Such a measure would integrate the various components of transport system design. Greenhouse gas emissions can be a useful proxy for air pollution indices from motor vehicles. Once again, the Australian Sustainability Charter is based on a specific environmental outcome which could invite a range of solutions. These solutions (or pathways) might include incentives for greenhouse efficient vehicles, fuel efficiency standards, investment in transport modes with lower greenhouse gas emissions per kilometre, and planning that better integrates public transport, walking and cycling. It is important to differentiate between outcome-based objectives (with their integrated targets) and the pathways that help achieve the vision articulated by the objectives / targets.

Attachment 3 – Recommended institutional arrangements



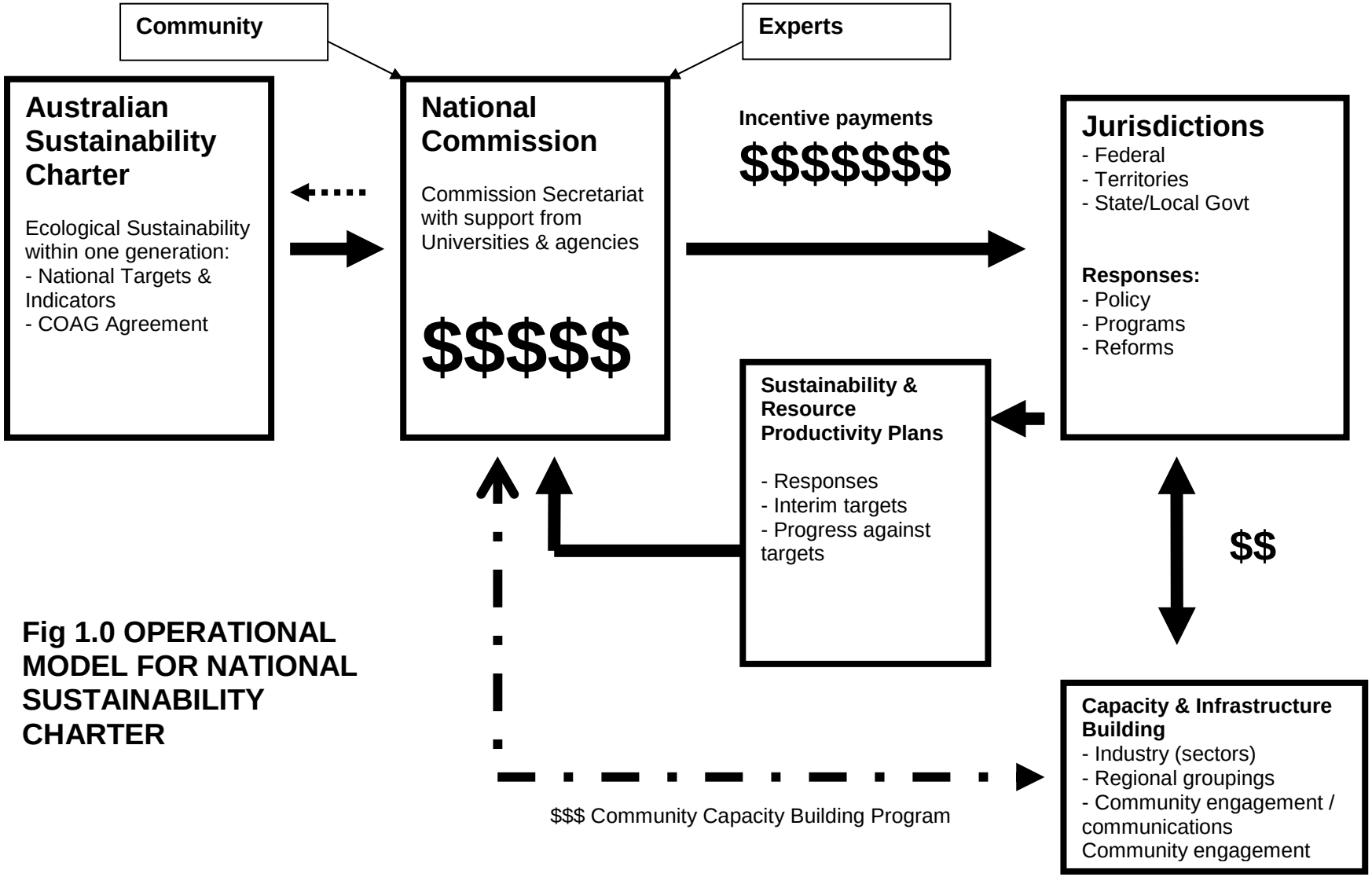


Fig 1.0 OPERATIONAL MODEL FOR NATIONAL SUSTAINABILITY CHARTER

Table 1.0 Australian Sustainability Charter: Ten headline objectives and integrated targets

Issue/ Objectives	International Commitments	Examples of Existing Australian Governments Commitments	Examples of potential National Targets
Stop dangerous climate change	Framework Convention on Climate Change	NSW, SA, VIC have committed to 60% reduction in GHG emission by 2050 National Biodiversity and Climate Change Action Plan 2004–2007, Natural Resource Management Ministerial Council (2004).	At least 60 % reduction in GHG emissions by 2050, with at least 30% reduction within one generation (2030). At least 30 % renewable energy production by 2030
Secure water for all life	Convention on Biological Diversity (CBD)[2] RAMSAR JAMBA/CAMBA International Convention on Wetlands	National Water Initiative 23 (iv) complete the return of all currently over allocated or overused systems to *environmentally-sustainable levels of extraction* (Nominal target Date 2014). Vic Govt: 20% of water recycled by 2010.	50% reduction in urban water use by 2030 All currently over allocated or overused systems to *environmentally-sustainable levels of extraction by 2015* 1500 GL of water returned to the Murray – Darling rivers for environmental use by 2015. All freshwater systems (rivers, wetlands, estuaries) returned to ecological health by 2030 All rivers are in good or better condition (as per agreed or accredited methodology) by 2030.

[2] Australia ratified the Convention on Biological Diversity on 18 June 1993, following agreement by the Council of Australian Governments

Protect and conserve biodiversity	Convention on Biological Diversity (CBD). In its decision VI/26, the Conference of Parties adopted a Strategic Plan for the Convention including a target "*to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional,*	National Strategy for the Conservation of Australia's Biological Diversity, Department of the Environment, Sport and Territories, 1996[3] *National Objectives and Targets for Biodiversity Conservation 2001–2005*, (2001) sets an outcome of: "*Reversal in the long-term decline in the extent and quality of Australia's native vegetation cover..*" National Framework for the Management and Monitoring of Australia's Native Vegetation *Natural Resource Management Ministerial Council 2001*	At least 15% of each of Australia's terrestrial ecological regions effectively conserved in a National Reserve System by 2020. [4] 80% of the number and extent of regional ecosystems covered national reserve system by 2010[5] and 100% by 2015 . [6lxxx] At least 30% of Australia Marine ecosystems contained in marine protected areas by 2020.

[3] NRMMC 10/06 21 April 2006, Council agreed to review the *National Strategy for the Conservation of Australia's Biological Diversity* (National Biodiversity Strategy) and the *National Objectives and Targets for Biodiversity Conservation 2001-2005* (National Objectives).

[4] The IUCN Commission on National Parks and Protected Areas (IUCN 1992) identified that a minimum of 10% of each biome should be preserved. In Australia, the JANIS reserve criteria used in the Regional Forrest Agreement process (1996) identified 15% of the pre-1750 distribution of each forest ecosystem as the target for reservation on an IBRA regional basis but noted some flexibility is acceptable and desirable. JANIS also gave priority to the needs of rare, vulnerable and endangered forest ecosystems and species and determined that the target for vulnerable ecosystems is 60% reservation of the current area. For all remaining rare and endangered forest ecosystems the JANIS target is 100% reservation or protection Commonwealth 2004., Directions for the National Reserve System – A Partnership Approach. Prepared by the National Reserve System Taskforce of the NRM Ministerial Council's Land, Water and Biodiversity Committee.

[5] Protected area establishment and good management are one of the most cost-effective public policy tools for the conservation of Australia's native biodiversity. The Prime Minister's Science, Engineering and Innovation Council estimated that an investment of $300-400M would achieve 80% protection of the full range of regional ecosystems (an established national target), save 14,700 native species and result in collateral benefits of $2,000M. Possingham, H., Ryan, S., Baxter, J. & Morton, S. 2002. *Setting Biodiversity Priorities*. A paper prepared as part of the activities of the working group producing the report Sustaining our Natural Systems and Biodiversity for the Prime Minister's Science, Engineering and Innovation Council in 2002. DEST, Canberra. p9

[6] Figgis, P.,(2004) Directions for the National Reserve System: A Partnership Approach: A Submission to the National Reserves System Section, Australian Government Department of Environment & Heritage, Australian Conservation Foundation, April

	and national level as a contribution to poverty alleviation and to the benefit of all life on Earth".	*Victoria's Native Vegetation Management – A Framework for Action 2002* - sets a goal of : A reversal, across the entire landscape, of the long term decline in the extent and quality of native vegetation leading to a net gain.	No new extinctions. 100% of rare, vulnerable, endangered ecosystems and species contained in protected areas by 2030. A reversal across the landscape of the extent and quality of native vegetation leading to a net gain by 2020. 10% increase in the extent and quality of native vegetation by 2030.
Restore our land	Convention on Biological Diversity(CBD)	Natural Heritage Trust and National Action Plan on Salinity and Water Quality	The spread of dry land salinity and sub soil acidification has stopped - is restricted to less than 10% of cultivatable land by 2030 and is being reversed were feasible. Surface soil loss reduced to pre-European levels (as per agreed methodology) No new weed/pest species introduced Weed infestation reduced (as measured by agreed methods & indicators) by 25% by 2030 with a focus on high production and high quality conservation areas.

Ensure clean air	Montreal Protocol (ozone depleting substances) Stockholm Convention on Persistent Organic Pollutants	National Air Toxics Program National Pollutant Inventory National NEPM on Air Quality State Environment Protection Legislation	National releases of anthropogenic ozone depleting substances eliminated by 2010. Levels of ambient air pollution indicators (Sulphur dioxide, nitrogen dioxide, ground level ozone, lead, particulates, carbon monoxide) below national standards for all indicators by 2020. A 50% reduction in the total emissions of toxics releases to air by 2030.
Eliminate toxins from our environment	Stockholm Convention on Persistent Organic Pollutants[7] Basel Convention Control of Transboundary Movementts of Hazardous Wastes and their	Hazardous Waste Act (Fed) National Air Toxics Program National Pollutant Inventory	Elimination of anthropogenic (human produced) releases of persistent organic pollutants by 2015. Newly manufactured products and production process are free from organic substances which are toxic[8] and or persistent and bioaccumaltive by 2030. Releases of toxic heavy metals (mercury, cadmium and lead) are eliminated by 2030. Newly manufactured products and production

[7] Article 5 of the convention states: "*Each Party shall at a minimum take the following measures to reduce the total releases derived from anthropogenic sources of each of the chemicals listed in Annex C, with the goal of their continuing minimization and, where feasible, ultimate elimination".* Annex C chemicals are PCBs, HCBs, and dioxins and furans.
[8] Toxic includes, carcinogenic, mutagenic and reprotoxic substances

	Disposal		process are free, as far as possible, from toxic heavy metals (mercury, cadmium and lead), by 2030. Hazardous waste generation is capped by 2010 and reduced by 50% by 2030.
Minimise waste	Basel Convention	NSW Environment Strategy for Sydney 2005: By 2014: • increase resource recovery in local government sector from 26% to 66%; • increase commercial and industrial from 28% to 63%; • increase construction and demolition sector from 65% to 76%; and • facilitate alternative waste technology and recovery facilities.	Generation of domestic, commercial and industrial waste is reduced by 30 % from 2002 levels by 2030. (equals total per capita waste generation of 1.2 tonnes per annum. Based on Vic figures) Ninety five percent of all domestic, commercial and industrial waste is recovered by 2030.
Use resources wisely		No currently directly considered. The CSIRO report B a l a n c i n g A c t – Triple Bottom line Assessment of the Australian Economy, 2005, outlines some of the potential	Reduce by 2030 total material flows in line with the leading 5% of OECD countries. The ratio of material flow to dollar value has increasedby x %[9]

		approaches to measuring resource efficiency.	
Reduce our ecological footprint[10]		No national of State policy on Eco Footprints. The methodology has been used in NSW State of the Environment Reporting, and by the Victorian EPA. VIC: Victorian resident's Footprint of about 8 global hectares is 4.5 to 6.5 per cent larger than the Australian's average Footprint of 7.7 global hectares. With a biocapacity of 5.4 global hectares per resident, Victoria has three times, per capita, the global average. Still, Victoria's biocapacity is one third smaller than the Victorian consumption Footprint of 8 global hectares per resident.[11]	Australia's cities/urban average ecological footprint is reduced from 4 ha per person to 3 ha per person by 2050.

[9] Average values for the economy as a whole are 1 kg of CO2 equivalent greenhouse gas emissions per dollar, 7.7 Megajoules (MJ, one million J) of primary energy use per dollar, 41 litres of managed water use per dollar, and 3.2 square metres of land disturbance per dollar – CSIRO, 2005, Balancing Act

[10] Ecological Footprint: A measure of how much biologically productive land and sea an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management schemes. The Ecological Footprint is measured in global hectares. Because trade is global, an individual or country's Footprint includes land or sea from all over in the world. Global Ecological Footprint Network, Ecological Footprint Standards 1.0 **www.footprintstandards.org**
Ecological Footprint accounts track our supply and use of natural capital. They document the area of biologically productive land and sea a given population requires to produce the resources it consumes and to assimilate the waste it generates, using prevailing technology. In other words, Ecological Footprints document the extent to which human economies stay within the regenerative capacity of the biosphere, and who uses what portion of this capacity. See

[11] EPAV (2005) The Ecological Footprint of Victoria, Assessing Victoria's Demand on Nature., prepared for EPA Victoria by the Global Footprint Network and the University of Sydney, October.

[12] NSW (2005) Environment Strategy for Sydney

		NSW: The environmental footprint of Sydney is 200 times larger than its urban footprint. Sydney's environmental footprint is growing at a greater rate than our population. During the five years from 1994 to 1999, the environmental footprint of Sydney's residents increased by 16% to 7.4 hectares per person If the environmental footprint continued to grow at this rate, by 2031 Sydney's environmental impact would cover almost all of NSW. [12]	
Make transport sustainable		Melbourne 2030, Metropolitan Strategy, Victoria, sets the target of 25% public transport by 2030. Total passenger kilometres travelled is also a potential measure which reflects walk-ability, better access to local employment etc.	Increase shared low net carbon transport use in Australian cities per capita to 25 % by 2030. Increase by 50% the average fuel efficiency of vehicles by 2030. [13] A decline in total passenger vehicle kilometres travelled by 2020 [14]

[13] By 2030 the average new car is operating at 5 litres per 100 km over all driving cycles compared with about 10 L/100 km currently. CSIRO estimate that 6L/100km is 'best current automotive technology', see Dunlop, M., Poldy, F., Turner, G.M. (2004) Environmental Sustainability Issues Analysis for Victoria: a report prepared for the Department of Sustainability and Environment, Victoria. CSIRO Sustainable Ecosystems, Canberra.

[14] In 2005, Melbourne's motor vehicles are estimated to have travelled almost 38 billion kilometres. This is equivalent to 950,000 trips around the equator, an increase in distance travelled of almost 26% since 1995. Passenger cars accounted for 84% of the total distance travelled. If current trends continue, by 2020 the total annual distance travelled by Melbourne's motor vehicles is expected to rise by a further 25% to over 47 billion kilometres.

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