Secretary
Inquiry into the Kyoto Protocol
Joint Standing Committee on Treaties
Parliament House
Canberra ACT 2600

15 September 2000

Dear Secretary,

For more than 30 years the Australian Conservation Foundation has campaigned on behalf of its members to protect Australia's environment. ACF is Australia's leading non-government, not-for-profit environment organisation and works alongside governments, business and the community to raise awareness about the environment, inform and lobby governments and to research a broad range of environment issues.

Despite the efforts of a small number of individuals to debunk the science of climate change, industries, particularly those operating across national boarders, have been embracing the move to a more secure energy future that has a greatly reduced impact on our environment.

In particular I draw your attention to General Motors that is supporting the commercialisation of fuel cell technology for passenger vehicles. General Motors anticipates that less than three percent of its vehicles sold in 2050 will operate on petrol.

BP Amoco, now trading as **bp** ("Beyond Petroleum") has had been trading emission credits internally for four years. It is also the world's largest manufacturer of photovoltaics and plans to reduce its greenhouse emissions by at least 10% by 2010 from a 1990 base line.

In a world where the market is king, the market is gearing up for the inevitable, a cost on greenhouse pollution. Industry is demonstrating leadership, while Government appears uncertain of what action to take.

As no one could predict the impacts of Y2K; no one can clearly predict the impact of rising levels of greenhouse gases on life on our planet. Yet we spent billions of dollars protecting ourselves from an uncertain threat, Y2K. In a similar fashion we spend money on our country's defense forces and purchase insurance to hedge against future risks. It is increasingly difficult to see why we hesitate to act to protect ourselves from climate change when already these effects are being felt in the increased occurrence of severe weather related incidents causing loss to property and human life.

ACF shares the concerns presented in the submission by our umbrella group, the Climate Action Network Australia. I refer you to CANA's submission for the views of the ACF. Further, I refer you the attached document which is part of a forthcoming ACF publication. In this document we explore briefly, carbon credits, emissions trading and sequestration amongst other issues.

Yours sincerely,

Nicolette Boele
Co-ordinator - Sustainable Cities and Industries Campaign

MODULE 23
PROTECTING OUR CLIMATE
(A GREENHOUSE ACTION PLAN)

It is clear that small [climate] changes in the past 10,000 years had very large ecological effects and they can happen bloody fast. The end of the ice age took less than a century – kapow!
Reid A. Bryson, *Wall Street Journal*, 31 December 1969.

… the largest obstacle to meeting the challenge of climate change is not the huge array of wealthy vested interests and the tens of thousands of ordinary people around the world who work in the oil and the coal industries, the burning of which produce these greenhouse gases. The largest obstacle is the continued clinging of people in wealthy countries and developing countries to a big idea that is no longer true -- the idea that the only way a country can become wealthy and remain wealthy is to have the patterns of energy use that brought us the Industrial Age. In other words, if you're not burning more oil and coal this year than you were last year, you're not getting richer; you're not creating more jobs; you're not lifting more children out of poverty. That is no longer true.
US President Bill Clinton, Christchurch, New Zealand, 15 September 1999

1. Summary

1.1 Protecting Our Climate

As Australians we pride ourselves on having the best climate in the world. It's a climate that can support a healthy and relaxed lifestyle. It also supports our unique and diverse plants and wildlife. And much of our economy –agriculture, fisheries and tourism in particular – depends on the climate we enjoy.

Scientists now agree that the release of greenhouse gas emissions into the atmosphere, due to land clearing and the burning of coal, oil and gas, is threatening to change our climate, raise sea levels and to harm all life on earth.

The good news is that there is enormous potential in Australia for reducing our greenhouse gas pollution. ACF believes that a comprehensive and well-implemented plan of action by governments, industry and the broader community can reduce Australia's greenhouse gas pollution significantly below 1990 levels by 2010, contributing to international efforts to protect the global climate. Along the way we can strengthen our economy, create new jobs and enhance our quality of life. The plan of action will focus on using our energy more wisely and shifting way from greenhouse polluting fuels to clean and unlimited renewable energy sources such as solar and wind.

1.2 A Greenhouse Action Plan

ACF believes that Australia will benefit environmentally, economically and socially if we contribute our fair share to international efforts to protect the global climate. A comprehensive and systematic greenhouse action plan that has the support and participation of all levels of government, industry and the broader community can transform Australia's energy sector by 2050, away from fossil fuels to one that relies principally upon the efficient use of renewable energy. A 'Factor 4'[1] revolution will also see enormous improvements in energy efficiency, contributing to annual energy cost savings of billions of dollars. A recent study for the World Wildlife Fund found that America could cut its emissions of greenhouse pollution by 14 percent on 1990 levels while reaping savings of $27 billion dollars and generating 900,000 jobs (Bernow et al. 1999).

An integrated strategy towards this vision can and should be implemented over the next 3 to 10 years. This would include:

- Ratification of the Kyoto Protocol with enabling legislation to give force to the Protocol
- A challenging but achievable renewable energy target
- National electricity market reform
- A program of measures to drive national energy efficiency
- A vehicle fuel efficiency improvement program
- An end to broad-scale land clearing
- GST exemptions for renewable energy equipment, best-practice energy efficiency technologies, public transport charges and renewable energy
- A more challenging national reduction target
- A comprehensive national greenhouse gas emissions trading scheme and/or a carbon tax as part of the process of environmental tax reform
- Regional assessment of mitigation opportunities.

2. Background – Australia and the Climate Change Issue

The Intergovernmental Panel on Climate Change (IPCC), the world's most authoritative review body on the science of climate change, has concluded that "... *the balance of evidence suggests a discernible human influence on global climate"* (IPCC 1996). The burning of fossil fuels (coal, oil and gas) to power our industry, warm and cool our homes and offices and to fuel our motor vehicles, combined with land clearing and other activities are releasing vast quantities of carbon dioxide, methane, nitrous oxide and other greenhouse gases into the atmosphere. In 1997 global emissions of carbon dioxide from fossil fuel burning alone totalled 23 billion tonnes, up from just 1 billion tonnes a century ago (IEA 1999). The atmospheric build-up of these gases is, in the opinion of many scientists, already warming the surface of the earth - the 1990s was the warmest ever decade recorded (Brown et a. 1999). Global warming will, in turn, lead to climate change, raise sea levels and threaten both the natural environment and human systems.

Australia is a major source of greenhouse gas pollution. Although emissions here are only a small proportion of global emissions, the Australian total of almost 500 million

[1] 'Factor 4' refers to the hypothesis that resource productivity, including energy efficiency, can be improved fourfold while maintaining or improving the quality of life.

tonnes per year (carbon dioxide equivalent – AGO 1999) represents about 26 tonnes per person, the highest emissions per person of any industrialised country. Despite this, in 1997, at international negotiations designed to wind back greenhouse gas emissions and protect the global climate, Australia was one of only three industrialised countries that was permitted to continue increasing its emissions.

ACF believes that not only is this situation unfair, but that failure by Australia to reduce its greenhouse gas emissions will also do it enormous harm in the long term. Australia will benefit environmentally, economically and socially if we contribute our fair share to international efforts to protect the global climate.

3. Australia's Response to Climate Change – A Vision for 2050

In 2050 ACF envisages a world that has made giant strides towards protecting the global climate. The scientific community estimates that to stabilise the concentration of greenhouse gases in the atmosphere will require reducing global emissions by up to 80 percent below current levels (Houghton et al. 1996). Environmental organisations believe that this objective must be achieved by 2050 in order to avert the most dangerous impacts of climate change. ACF believes that Australia, as a responsible member of the international community, will need to reduce its emissions by an equivalent amount.

The key to substantial and sustained emission reductions in Australia lies with a transition away from our present dependence on fossil fuels. In 2050 most of Australia's energy demands will be met from renewable sources such as solar, wind and biomass. This is not a pipedream. A number of countries have already commenced this transition. Denmark, for example, plans to source 35 percent of its energy needs from renewable sources by 2030 (CNE and USCAN 1997) and Germany has a target of 50 percent of its energy from renewable sources by 2050 (FMENCNS 2000). The renewable energy industry is one of the world's fastest growing industries. In NSW, for example, the sustainable energy industry is the fastest growing sector in the economy, growing at 25 percent per annum, faster than information technology or tourism industries (Mark Ellis & Associates 1999).

In 2050 Australia will also be far more efficient in its use of energy. Through improved technology and processes and more careful use of our energy we will require a fraction of the energy we need now to meet our day to day energy service needs – the 'Factor 4' revolution (see von Weizacher et al. 1997). By so doing, Australian households and businesses will save up to 20 billion dollars each year (at today's costs) in reduced energy bills.

Achieving the scenario outlined above will require fundamental shifts in markets and government policy, as well as a change in thinking of the community as a whole. The proposals outlined in the action plan below represent only the first steps towards achieving the necessary changes.

4. A Plan of Action to Reduce Australia's Greenhouse Gas Emissions

To start moving Australia towards this vision will require a comprehensive and systematic action plan that has the support and participation of all levels of government, industry and the broader community. Although Australia currently has a National Greenhouse Strategy, the strategy is marred by ad hoc implementation, poor lines of accountability, and inadequate timetables and targets. Furthermore, the strategy does little to engage Australians, even though there is strong community support for cutting Australia's greenhouse gas emissions[2].

4.1 A Three Year Plan of Action

ACF believes that the following elements of its greenhouse action plan can be readily achieved within the next three years.

Ratification of the Kyoto Protocol and enabling legislation

The 1997 Kyoto Protocol is at the centre of international efforts to protect the global climate. Over 20 countries have now ratified the Protocol and over 80 have signed it. The European Union, Japan and New Zealand have signalled their intention to ratify the Protocol by 2002. ACF urges the Australian Government also to ratify the Protocol by 2002. Once ratification has taken place the government, in partnership with the states, should also set about the task of introducing cascading Commonwealth and state greenhouse legislation that gives force to Australia's obligations under the Kyoto Protocol and provides for national consistency in the implementation of greenhouse policies and measures.

The enabling legislation should incorporate a national target to reduce emissions below 1990 levels. The Kyoto target of an 8 percent increase above 1990 levels is out of step with most developed nations. Several analyses of the Kyoto protocol rules have found that Australia may be able to meet its target under business as usual conditions (emission increase of up to 30 percent above 1990 levels).

A national target that is stronger than Kyoto will drive domestic improvement and reform. A national reduction target will also ensure that the Australian economy is ready to commit to a reduction target as part of the second Kyoto commitment period.

Many other nations, including the United Kingdom and Germany, have national reduction targets that go beyond Kyoto commitments.

Government expenditure: $1-2 million per annum for first three years.

A challenging but achievable renewable energy target

Renewable energy is the energy source of the new millennium. In late 1997 the Australian government announced a target of increasing the proportion of electricity

[2] An opinion poll in 1997 found that 79% of Australians believe that Australia should sign an agreement to cut greenhouse gas emissions (Hogarth 1997).

supplied from renewable sources and waste by 2 percent from 10.5 percent of supply in 1997 (mainly hydro and biomass) to 12.5 percent by 2010. The new renewable capacity is to then be maintained until at least 2020.

The government proposal is a first step only and a very small one at that. The target, particularly when extended to 2020, is significantly less challenging than similar targets introduced overseas. Denmark has a target of increasing its proportion of total energy supply (not just electricity) from renewable sources from 8 percent in 1996 to 12-14 percent in 2005 and to 35 percent in 2030. Germany recently passed the Act on Granting Priority to Renewable Energy to enable 50 percent of Germany's energy to come from renewable sources by 2050 (FMENCNS 2000). The EU plans to double its electricity from renewable sources by 2010 and the UK has a target of 10 percent of electricity from renewable sources by 2010, up from 2.4 percent (including large-scale hydro, 0.3 percent without) in 1995 (CNE and USCAN 1997).

ACF urges the government to strengthen Australia's renewable energy target. Legislation should be enacted to ensure that an additional 5 percent of electricity is supplied from renewable sources by 2010, with a further 9.5 percent of electricity supplied from renewable sources by 2020. In 2020 at least 25 percent of Australia's electricity should be supplied from renewable sources. This is a challenging but achievable target.

ACF also recommends that in implementing the renewable energy target the Australian government provide clear eligibility criteria for proposed energy projects to ensure that they are ecologically sustainable and 'renewable' in the strictest sense. Large-scale hydro-electricity projects and electricity sourced from coal-seam methane or native forest woodchips would not be eligible under appropriate criteria.

Government expenditure: additional $0.2 million per annum for first three years. New investment in energy supply sector: approximately $50-200 million per annum over 20 years.

Sparking reform – the national electricity market

Efficient markets require perfect information, no barriers to entry, free and open competition and full incorporation of all associated environmental and social costs in prices. Current energy markets have shortcomings in all of these areas. Although Commonwealth and state reforms may have helped to address some of these shortcomings, the narrow focus of the reform process has worsened many of the barriers to energy efficiency and renewable energy. The electricity wires networks remain regulated monopolies that are highly skewed to favour coal-fired power stations and the construction of new network investment. The net result of this situation is likely to be higher energy service costs to consumers **and** higher greenhouse gas emissions.

ACF recommends that all governments, Commonwealth and state, support reforms to the National Electricity Market, to ensure the removal of market barriers to energy efficiency, demand management and to cost-effective and greenhouse-friendly supply sources such as solar hot water, wind power and cogeneration. Reforms needed include the provision in energy market codes, legislation and utility licenses for:

- integrated Resource Planning of both demand and supply options;

- environmental performance criteria in the license conditions of utilities, including performance on greenhouse gas emissions,
- monitoring and public reporting of environmental performance by utilities;
- development of greenhouse gas reduction strategies and action plans;
- fairer regulation of prices so that distributed electricity generation, such as cogeneration, grid-connected renewable energy systems and energy efficiency programs are not discriminated against;
- provision for regulated monopoly energy suppliers to recover investment in demand-side measures on the same basis as supply-side investment.

Government expenditure: additional $2 million per annum for first three years.

Driving energy efficiency

Per unit of national economic output, Australian households and industry are more efficient in their use of energy than they were 25 years ago. The amount of energy required for a given value of production (referred to as energy intensity) fell by around 0.5 percent per year in Australia between 1973 and 1997. Nevertheless, this improvement is poor compared to other OECD countries, which improved their energy intensity by an average of 1 percent over the same period (IEA1998). The upside of this poor performance is that there is an enormous untapped energy efficiency resource available in Australia, with a number of studies suggesting that energy consumption in Australia could be cut by 20-40 percent through profitable measures.

If we set as a goal for Australia that by 2010 we were at the OECD average for end-use efficiency we would reduce the growth of electricity demand by something like 30,000 gigawatt hours. We would reduce the amount of greenhouse gasses by between 20 and 30 million tonnes.

Electricity Supply Association of Australia (ESAA) managing director Keith Orchison. (Reuters 18 July 2000)

ACF recommends that energy efficiency become a national priority in Australia, with the aim of Australia achieving world's best practice in the efficient use of energy by industry, governments, and in households and the transport sector. The drive for improved energy efficiency in the next three years should include the following elements:

- New or greatly strengthened national mandatory energy performance standards for new industrial equipment, household appliances, commercial and residential buildings.
- A training program and an incentives package for the design and installation of efficient energy using equipment in factories, commercial buildings and homes. The program and package would be aimed at designers, installers of energy using equipment including engineers, architects and electricians.
- Establishment of an 'energy leadership' fund for the development, commercialisation and marketing of leading edge, energy efficient industrial, commercial and household equipment and practices. The Fund would represent a substantial addition to current

national and state energy efficiency programs. Establishment of the fund would draw upon the experience of overseas programs such as the US 'Golden Carrot' program.

Government expenditure: additional $100 million per annum for first three years, to then be reviewed.

Vehicles for change

Vehicle fuel efficiency is central to the development of a national priority focussing on energy efficiency and reducing greenhouse gas emissions from motor vehicles. Vehicle fuel efficiency is of particular importance as measures in this area have significant short- to medium-term potential to reduce Australia's consumption of petroleum and related greenhouse gas emissions, as well as urban air pollution (see Module 24).

A range of studies over the past 5-6 years indicate that a reduction in the average fuel consumption of conventional new motor vehicles sold in Australia of up to 30 percent can be achieved (BTCE 1996; NELA 1991, ESDWG 1991c). Furthermore, the new hybrid Holden and Axcess II hybrid cars are expected to deliver average fuel consumption of 3.5-4.5 litres/100 km, approximately 45-60 percent better than the average fuel consumption of current new vehicles. These vehicles can be built for only about 10 percent more than conventional cars. Despite this information, a voluntary agreement for average new vehicle fuel consumption has been negotiated with the automobile industry that is only a marginal improvement on the current rate of fuel consumption.

ACF recommends the following package of measures to drive fuel efficiency in new motor vehicles:

- Commonwealth and state governments to lead an innovative procurement policy, by introducing and gradually tightening fuel efficiency standards for government fleet vehicles.
- A mandatory target for the average fuel consumption of new vehicles sold in Australia. A tough but achievable target is 4-5 litres/100 km for the average fuel consumption of new motor vehicles (including cars and 4WD vehicles) sold in Australia by 2010.
- A universal fuel-consumption labelling scheme for new motor vehicles sold in Australia. Current work on this scheme needs to be accelerated.
- A skewed sales tax on new vehicles with rates set according to the fuel efficiency of vehicles - the tax to be set at minus 10 percent for vehicles with very high fuel efficiency, rising to plus 20 percent for 'gas guzzlers' with low fuel efficiency.
- A sustainable industry development plan for the transport industry in Australia. Development of the plan should include consideration of the potential for manufacturing a super efficient 'hypercar' in Australia (see Module 21).

Government expenditure: additional $5 million per annum for first three years.

Ending broad-scale land clearing

Australia is the only industrialised country in which the clearing of native vegetation contributes a significant proportion of country greenhouse gas emissions. Estimates

provided in the National Greenhouse Gas Inventory indicate that, although emissions from this source have fallen since the 1980s, in 1997 approximately 65 million tonnes or 13 percent of total net greenhouse emissions were due to the clearing of native vegetation.

A report done for ACF by Access Economics indicates that the increase in land clearing between 1997 and 1999 is roughly equivalent to the increase in national transport emissions between 1990 and 1997 or just less than the entire transport emissions for Queensland in 1995. The economic return on the majority of this land clearing, primarily for beef grazing, is about 100 times less per tonne of carbon dioxide emitted than the wood and paper products industry and about 300 times less than the food, beverages and tobacco industry. [Access Economics link http://www.acfonline.org.au/campaigns/landclearing/official/ghlc.htm]

Recommendations dealing with land clearing are contained in Modules 11, 13 and 14.

GST exemptions and other tax measures

GST exemptions or reductions are cost effective means to reduce greenhouse gas emissions and to remove greenhouse unfriendly distortions introduced through the 1999 tax reform package. Similar measures have been undertaken in other countries with value-added or consumption taxes. For example the UK 2000/01 budget reduced VAT on energy saving materials and solar panels from 17.5 percent to 5 percent.

Measures for Australia include:

- Zero-rate renewable energy equipment[3]
- Zero-rate best-practice energy efficiency[4]
- Zero-rate public transport charges[5]
- *Zero-rate electricity from certified renewable energy sources*[6]
- An emissions sales tax on new vehicles with rates set according to the fuel efficiency of vehicles[7]

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3 Renewable energy equipment is defined as goods which are used to collect, absorb or concentrate the sun's rays for the purpose of using them as a source of energy for heating, lighting and other purposes, including solar lighting equipment, domestic solar hot water equipment and photovoltaic panels; which are used for collecting and concentrating wind for the purpose of using it as a source of energy for heating lighting and other purposes; or, goods to facilitate the operation of the equipment described above.

4 Energy efficiency is defined as a supply of low energy halogen or compact fluorescent light bulbs; thermal insulation; domestic, industrial or commercial electrical appliances that meet national best practice energy efficiency performance standards; equipment to convert an internal combustion engine to operate on natural gas or liquefied petroleum gas; or, services related relating to the installation, maintenance or repair of the goods described above.

5 Not including that using aircraft or taxis.

6 For example Greenpower schemes as currently certified by the NSW Sustainable Energy Development Authority.

7 We propose minus 10 percent for vehicles with very high fuel efficiency rising to plus 20 percent to with very low fuel efficiency. While this would require the development of standards, the information to do this is currently available. Such a measure would see fuel-efficient vehicles drop in price and inefficient vehicles rise in price in comparison to changes under the GST. Depending on how such a scheme is designed this would be revenue-neutral or revenue-positive compared to the current GST situation.

4.2 A Ten Year Plan of Action

ACF believes that following major elements of its action plan are readily achievable within the next ten years.

A more challenging national reduction target

Australia's Kyoto protocol target on an 8 percent increase above 1990 levels is not adequate. Several analyses have revealed that Australia is likely to meet this target under 'business as usual' conditions (Kinrade 1999, Hamilton 2000). This is largely due to the inclusion of the 'Australia clause' (clause 3.7 in the Kyoto Protocol) which allows Australia to include historically declining land clearing emissions as part of its abatement task.

It is clear that a strong reduction target well below 1990 levels is achievable and will be expected by the international community for the second Kyoto commitment period (post 2012).

Taking a more substantial target will be a key step in ensuring that developing nations commit to a reduction target as part of the second Kyoto commitment period.

A stronger Kyoto target will also bring Australia into line with most other developed countries. This is important for ensuring that Australia is not left behind in the development of new carbon neutral industries.

A National Emissions Trading Scheme

Emissions trading has the potential to provide greenhouse policy makers and industry the best of both worlds. If correctly applied, an emissions trading scheme will establish legally binding restrictions, or caps, on greenhouse gas emissions. These caps will be tightened over time. Once a cap is in place, major polluters can then trade emission permits amongst themselves, in order to minimise the cost of meeting the cap.

In other areas of pollution control emissions trading appears to have been relatively successful, as evidenced by the Sulphur Dioxide Trading Scheme in the US, which has substantially reduced acid rain causing emissions at a much lower cost than industry expectations. An emissions trading scheme for greenhouse gas emissions will be a more complex undertaking but the principle of emissions trading scheme is enshrined in the Kyoto Protocol and there has already been considerable work in Australia and elsewhere to examine the potential for national emissions trading schemes.

ACF supports the development and introduction of a national emissions trading scheme within the next three to five years provided that a number of first principles are met. These principles include:

- The trading scheme should be a 'cap and trade' scheme, with stringent emission caps being introduced initially for major greenhouse polluting industries and sectors such as electricity supply.
- Allocation of permits should be principally by way of an auctioning system. An auctioning system allows for fairness in the allocation of permits and provides a potential source of government revenue for investment in the renewable energy industry[8]. A trading scheme, based on the auctioning of permits, can therefore be linked to the process of environmental tax reform (see Module 3). It may also provide an alternative instrument to a carbon tax if it is comprehensively implemented (see following recommendation).
- Permits should be withdrawn from the market over time to ensure that total allowable emissions are wound back.
- Tight limitations, including a numerical 'cap', should be placed on allowing sinks activities, such as tree planting, to generate emission 'credits'. A greater focus must be placed on credits generated by efficiency improvements and renewable energy offsets.

It needs to be emphasised, though, that emissions trading offers only a partial policy response to the greenhouse issue. No matter how well designed and all-embracing the scheme that is put in place, emissions trading will only be one of a range of policy instruments.

Government expenditure: $10-12 million per annum for first three years.
Revenue from auction of permits: not assessed (see Appendix 1).

Carbon tax for improved environmental and economic performance

Numerous international studies attest to the close correlation between higher energy prices and taxes and improved energy performance (IEA 1993, Schipper 1991, von Weizacher 1997). Less well known are studies which reveal that countries with relatively high energy prices have generally have had better economic performance over the past 25 years than those with lower energy prices (von Weizacher et al. 1997).

The introduction of a revenue neutral carbon tax provides Australia with the perfect opportunity to simultaneously tackle its greenhouse gas emissions and improve energy and economic performance. A carbon tax will also ensure that those responsible for causing greenhouse gas emissions pay for the environmental damage that this causes – the polluter pays principle. With the introduction of a carbon tax, the removal of taxes on other, less environmentally damaging activities such as taxes on employment, form an important plank of environmental tax reform[9].

Numerous industrialised countries have now introduced carbon taxes or are about to do so. These include: Denmark (US $2-24 per ton of carbon); France ($23-31, rising to $76 in 2010); Norway ($4.60-15.30); and Sweden ($6.50-13.10) (Baron 1996; Sotto 2000).

The introduction of an effective emissions trading scheme, with auctioning of permits, may obviate the need for a carbon tax. Nevertheless, unless the emissions trading

[8] See Module 21 for further discussion of this proposal.
[9] See Module 3 for as more detailed discussion of ecological tax reform.

scheme is comprehensive, covering a large majority of energy suppliers or users, a carbon tax is likely to be an important complement to an emissions trading scheme. In the absence of a comprehensive national emissions trading scheme, therefore, ACF recommends that a revenue neutral carbon tax be introduced in the next five years. The tax would apply to domestic consumption of fossil fuels and initially be applied at a low level, for example $5-10/ton of carbon ($1.37-2.75/ton of carbon dioxide). Over time the level of the tax would gradually rise to more fully reflect the environmental costs of fossil fuel use. Revenue from the tax should be recycled to reduce other taxes such as payroll tax.

Government revenue: $410-820 million per annum.

Regional assessment of climate change adaptation and mitigation opportunities

International rhetoric is strong on the need for integrated regional assessments of the impacts of climate change and consequent adaptation and mitigation opportunities. There is no doubt that there are interactions - conflicts and synergies - between activities in a region which mean that some truly integrated assessment is needed, rather than a sectorally-based partial analysis or national analysis with insufficient resolution to examine interactions. To date a number of industry-specific studies have been attempted in various regions, none of which have coped properly with the integration of impacts, adaptation and mitigation, all three of which interact intimately.

Methodology for integrated regional assessments is still to be fully developed, but there are sufficient concepts available for pilot studies to be attempted in conjunction with regional communities and all tiers of government. They would need to be driven by community participation in terms of defining the problems faced by the regions in the context of climate change, the prospective responses, and the implications of those responses. Out of the pilot studies should emerge a more general program of regional studies which can be more formally integrated with regional planning processes.

ACF recommends that 5 regional pilot studies be resourced for 3 years, followed by seed money for a wider program. The regions should include at least one dominated by urban issues, including the catchment, one prospering agricultural region in an area likely to be subject to climate change, one low productivity rangelands region, and one region where activities on land affect the surrounding oceans. All sectors must be included in any region. The studies should encompass at least two iterations through a sequence of:

(i) whole of community awareness-raising,
(ii) consultation about possible issues and possible responses to these,
(iii) regional modelling of the implications of these responses in terms of social, economic and environmental outcomes (including carbon sequestration, resource usage and waste production) and
(iv) further community education and adjustment of views. A review of the 5 pilots will provide methodology to be implemented in a further phase.

Additional cost to government: $10 million per year for 3 years, $15 million per year seed money for 5 years thereafter

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The economic, environmental and social implications of a punitive approach to any domestic regulation of industry including such proposals as a carbon tax and an incentive-based approach.