

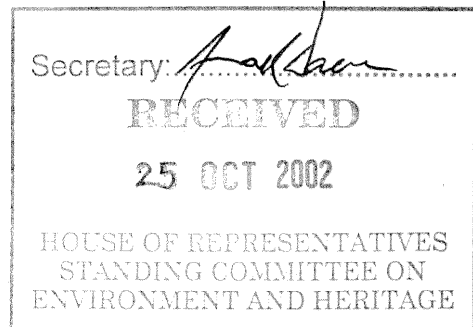
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02EC3842

Mr Ian Dundas
 Committee Secretary
 House of Representatives
 Standing Committee on Environment and Heritage
 Parliament House
 CANBERRA ACT 2600



Dear Mr Dundas

Thank you for the opportunity to provide a submission to the Standing Committee on Environment and Heritage Inquiry into employment in the environment sector.

I would like to bring to your attention the following issues that the South Australian Government has highlighted in its submission (attached) that we believe are important to the improvement of employment opportunities in the environmental sector:

- The need for meaningful trend data on, and definition of, the environment industry to establish the size and nature of the environment industry in Australia, both on a national and regional basis;
- Commonwealth, State and Territories commitment to a national campaign directed at young people to emphasise environment related industries as viable career options;
- An increase in Mandatory Renewable Energy Targets would open further opportunities for renewable energy producers and support industries;
- An investigation of the merits of incorporating concepts such as the Ecological Footprint technique into reporting on both the state of the environment and the economy.

Although the terms of reference do not explicitly refer to employment of Indigenous peoples in the environment sector, I note that the background provided in the Committee's media release highlights that the *'role of Indigenous land managers is likely to become increasingly important in environmental conservation and management....'*



Government
 of South Australia

The South Australian Government fully supports that view and is committed to continuing initiatives for cultural awareness for non-Indigenous staff and increasing employment of Aboriginal people in the management of parks and reserves and ecotourism, particularly those significant to Aboriginal culture and heritage.

Over the past few years, the South Australian Department of Environment and Heritage has been maintaining employment and training for between 20 to 40 Aboriginal staff and trainees to ensure this commitment is met.

Attached please find the submission for your consideration and I look forward to the Standing Committee's deliberations on this important issue.

Yours sincerely



JOHN HILL
MINISTER FOR ENVIRONMENT AND CONSERVATION

Date: 22-10-02

Parliament of Australia – House of Representatives
STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE
INQUIRY INTO EMPLOYMENT IN ENVIRONMENT INDUSTRY

SOUTH AUSTRALIAN GOVERNMENT SUBMISSION

Terms of reference of the inquiry
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The House of Representatives Standing Committee on Environment and Heritage will inquire into and report on:

- (1) The current contribution of environmental goods and services to employment in Australia;
- (2) The future potential growth, including barriers and opportunities for growth, of environmental goods and services, and impact on employment;
- (3) Current status and future requirements for an appropriately skilled workforce;
- (4) Appropriate policy measures that could encourage the further development of the environmental goods and services sector; and
- (5) Information and reporting systems that would support the uptake of environmental goods and services to enhance overall business performance and development of the sector.

EXECUTIVE SUMMARY AND RECOMMENDATIONS

Executive Summary

The South Australian Government has a number of initiatives and policies that are highly relevant to the Terms of Reference, in particular, the Government's stated commitments to sustainable and economic growth and to make South Australia a cleaner and greener State.

In formulating a response, the South Australian Government has focussed on Terms of Reference 1, 2, 4 and 5. The key issues identified by the South Australian Government and corresponding recommendations are summarised as follows (noting that many of the issues raised in the submission are relevant to more than one term of reference).

Term of Reference 1: Current contribution of environmental goods and services to employment in Australia

For purposes of this submission, the following broad definition of the environment industry is adopted.

The environment industry produces goods and services that measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems. It includes products and services that reduce environmental risk and resource use. It also includes environmental management and heritage conservation activities which provide economic benefits.

Comprehensive figures on the employment provided by South Australian environment industries are not available. However, based on economic assessment reports undertaken by the South Australian Government:

1. there are over 800 environment businesses in South Australia;
2. the environment industry continues to be a growth industry;
3. potential employment opportunities exceed current employment levels, indicating an imminent expansion across all sectors of the environment industry;
4. expansion of the industry does not necessarily concentrate in urban centres, evidenced by the growth in nature based tourism, natural resource management and remote area infrastructure development activities;
5. increasing opportunities for regional regeneration and employment growth across South Australia are significant in terms of regional social and economic sustainability.

The above information is also relevant to Term of Reference 2.

Further, in order to have meaningful trend data on the environment industry, it has been recommended that the Commonwealth work with States and Territories and the Australian Bureau of Statistics to establish the size and nature of the environment industry in Australia, both on a national and regional basis.

Term of Reference 2: Future potential growth, including barriers and opportunities for growth, of environmental goods and services, and impact on employment

The submission supports the empirical evidence linking regulation (including commitment to International Protocols) and growth in the environment industry sector. Barriers to and opportunities for growth in the sectors have been identified in relation to specific aspects of the environment industry, particularly the renewables and resource recovery sectors.

Term of Reference 3: Current status and future requirements for an appropriately skilled workforce

Although no specific details have been provided in relation to the status and requirements for workforce skills, the expected continued growth of environment related industries makes it imperative for Governments, universities and industries to keep abreast of the growth and any gaps and reassess requirements and programs accordingly.

The South Australian Government recognises that environmental industries such as aquaculture and fisheries are becoming increasingly popular in South Australia's regional areas and for regional young people. Consequently schools, Technical and Further Education facilities (ie TAFEs), universities and other educational and training institutions have a major role in ensuring that there is a steady stream of skilled personnel available for industry development.

The submission recommends that the Commonwealth commit, along with States and Territories, to a national campaign directed at young people which emphasises environment related industries as viable career options.

Term of Reference 4: Policy measures that could encourage the further development of the environmental goods and services sector

Policy measures required to encourage further development of this sector range from support for international conventions to specific changes to legislation currently in operation. In particular the following have been recommended:

- That the Commonwealth commit to increase the Mandatory Renewable Energy Target from 2% to 10%, thereby bringing Australia into line with leading international renewable targets and opening further opportunities for renewable energy producers and support industries.
- That Municipal Solid Waste be re-defined in the *Renewable Energy Act, 2000*, Section 17 (1) (k) to consider appropriateness of waste types based on broader sustainability principles. (This would prevent the resultant reduction in recycling activity which provides significantly higher employment opportunities.)

Term of Reference 5: Information and reporting systems to support uptake of environmental goods and services to enhance overall business performance and development of the sector.

Information and reporting systems are vital for enhancing business performance and development of the sector. Although there are a number of contemporary decision/policy making tools and reporting mechanisms, these need to be reported against meaningful and measurable criteria and information.

Hence it has been recommended that Governments work together on meaningful and measurable criteria and, in particular, that the Commonwealth:

- further investigate the merits of incorporating Ecological Footprint concepts into the national State of the Environment Report and in national accounts (as a counterbalance to Gross Domestic Product in assessment of national wealth and prosperity);
- encourage other sectors and other governments to investigate the merits of Ecological Footprint as a decision/policy making tool and its applicability to Triple Bottom Line reporting.

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1. INTRODUCTION

The South Australian Government welcomes the opportunity to provide a submission to the Inquiry into employment in the environment sector.

The South Australian Government has a number of initiatives and policies that are highly relevant to the Terms of Reference, in particular, the Government's stated commitments to sustainable and economic growth and to make South Australia a cleaner and greener State by (amongst others) :

- implementing policies and legislative changes for more sustainable development and tougher protection for the environment
- Developing the renewable energy sector and promoting renewable and non-greenhouse gas producing energy source and green industries
- Building on existing research strengths and intellectual capacity through strengthened partnerships between the Premier's Science and Research Council and the education and research community
- Promoting and sustaining innovation in the business, manufacturing and industries sector
- Building on South Australia's competitive advantages in such industries as Bioinnovation, food processing and wine, environmental services and waste management, tourism and new primary industries eg aquaculture
- Working closely with Local Government, the private sector and the community on services related to environment and heritage protection and management.

In formulating a response, the South Australian Government has focussed on more specific issues and actions relating to Terms of Reference 1, 2, 4 and 5. Although no specific details have been provided in relation to the status and requirements for workforce skills (Term of Reference 3), it should be noted that the expected continued growth of environment related industries makes it imperative for Governments, universities and industries to keep abreast of the growth and any gaps and reassess requirements and programs accordingly.

The 1993 South Australian Government's submission to the Commonwealth House of Representatives Standing Committee on Environment, Recreation and the Arts *Inquiry into Environmental Policies which stimulate Employment Growth* has also been provided to further inform the Committee given that much of the context and rationale for sustainability remains unchanged.

2. BACKGROUND

"Environmental protection does not hamper economic competitiveness ... (*indeed*) those nations with the most stringent environmental laws also had the highest rates of economic growth and job creation" (Porter in Bezdek 1993, *italics added*).

The key thrust of this submission is in support of a "triple bottom line" approach to government policy, legislation and reporting. Based on the growing international awareness of the benefits arising from the integration of social, economic and environmental considerations into decision making, this submission urges the Commonwealth Government to consider legislative changes and policy mechanisms that will ensure Australia is positioned as an environmentally sound and economically prosperous nation.

2.1 Environment protection and economic prosperity

Empirical studies have failed to establish a link between environment protection and negative economic growth (Meyer, 1992). Rather, research in the United States and Europe has found a statistically significant positive relationship between environmental regulation and economic growth and employment growth (Meyer 1992, Porter 1990 , Bezdek 1993).

The declining state of the environment, both locally and globally, provides the context for a growing need for environment protection activity. Given the anticipated growth in global demand for environmental goods and technologies, international market positions have the potential to be radically redefined with consequences for future national competitive advantage. The OECD has concluded that countries which lag behind in developing environmental products and services may find themselves with substantial trade imbalances in this area and a reduced quality of the environment (OECD, 1992).

3. THE CURRENT CONTRIBUTION OF ENVIRONMENTAL GOODS AND SERVICES TO EMPLOYMENT IN AUSTRALIA (T-O-R 1)

The Australian environment industry is a critical enabling sector for Australian manufacturing services, resources, primary industries and tourism industries. In 1996–97 the domestic environment market was worth approximately \$8.6 billion, employing 127,000 people in some 2000 firms and accounted for 1.6 per cent of GDP. The environment industry's exports were estimated to be \$300 million in 1996-97. The global environment market was estimated to be greater than \$1000 billion¹. The industry is broadly composed of resources providers (14%), equipment manufacturers and suppliers (28%) and service providers (58%). Annual industry growth has been 7%.

Comprehensive figures on the employment provided by South Australia's environment industry are not available. Environment industries are not defined as a separate sector by the Australian Bureau of Statistics so data on employment, expenditure and other economic indicators need to be aggregated from relevant areas. South Australia's view is that the environment industry will emerge to be of such significance that definition of the industry is required for statistical purposes and economic analysis.

Recommendation 1:

That the Commonwealth work with States and Territories and the Australian Bureau of Statistics to establish the size and nature of the environment industry in Australia, both on a national and regional basis.

3.1 Definition of Environment Industry

For purposes of this submission, the following broad definition of the environment industry has been adopted:

The environment industry produces goods and services that measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems. It includes products and services that reduce

¹ Source: Environment Industry Action Agenda launched in September 2001

environmental risk and resource use. It also includes environmental management and heritage conservation activities which provide economic benefits.

This definition is derived from the OECD definition but extended to cover natural resource management and heritage conservation aspects. The so called “green industries” covered by this definition need to be differentiated from “greening of industry” which occurs through the application of environmental management systems, triple bottom line reporting etc and applies across all industry sectors.

The following summary of data on employment in the environment sector in South Australia is based on economic assessment reports undertaken by the South Australian Government and ordered according to traditional environmental management subject issue areas – such as water and waste.

The surveys described below cover some aspects of South Australia’s environment industry but cannot be taken to provide a comprehensive or complete coverage.

3.2 Survey of South Australian Environment Industry

In 2001, the South Australian Department for Environment and Heritage in conjunction with the Office of Economic Development, the Environment Industry Cluster and the Australian Bureau of Statistics undertook a survey to establish the nature and extent of the environment industry in South Australia. These results are available in the report entitled *South Australian Environment Industry Survey 2001*. [See attached survey for further information or www.environment.sa.gov.au/sustainability/industry.html#Environment_Industry].

Some 1050 businesses were surveyed and of these, 204 were found to be not part of the industry (ie leaving 852 businesses). A total of 171 companies responded to the survey which was 20% of the total. Given the low response, the responses presented by this report should be regarded as a sample which may be indicative but not necessarily definitive of the industry. South Australia’s environment industry as reflected in the survey was diverse but dominated by environment protection and water management businesses.

The environment industry covered by the survey was characterised by a wide range in size, performance and significance. Of the 171 businesses that responded, around 120 were very small, with few employees, low salary costs, and revenues and capital expenditure of less than \$1 million. They were largely South Australian focused. At the other extreme there were a handful, around four or five large businesses, which between them accounted for the majority of employment, revenues, capital expenditure and probably R&D expenditure. In between these two extremes, there were around 40 middle ranking firms with between 5 and 100 employees, salary costs of \$1 million - \$20 million, and revenues and capital expenditures of \$2 million - \$70 million.

Although the revenues involved were relatively small, around half the businesses had interstate markets and around 10% served overseas markets. South Australia’s environment industries had reasonably strong links with other environment businesses in South Australia and elsewhere in Australia. Nearly half the businesses had contractor/subcontractor relationships and over one-third participated in joint ventures, strategic alliances, business networks or industry clusters

3.3 Independent Economic Assessment of Kerbside Recycling

According to Nolan ITU's *Independent Economic Assessment of Kerbside Recycling in Australia (June 2002)*, the economic and environmental impacts of kerbside recycling systems result in an overall benefit of \$42 per household per year. Specifically,

“On average, net financial costs amount to \$26 per household per year, environmental benefits to \$68 per household per year, with an average overall benefit of around \$42 per household per year.

Based on extrapolation, the national net financial cost for recyclables collection, sorting and delivery throughout Australia is estimated at \$158 million per year or, if current collection practices are included, \$136 million. This represents the current cost over and above the base landfill option. The national net environmental benefit of kerbside recycling (over landfill) is \$424 million dollars per year. The overall benefit is therefore an estimated \$266 million per year” (2002, XIV).

The economic and employment impacts to South Australia of the South Australian portion of the \$158 million per annum expenditure have not been calculated. It is expected that growth in this sector will lead to further development of the waste management and resource recovery industry, the packaging industry, the building sector and contribute to primary products industries.

The size of this particular environment industry sector is significant because of its direct relationship to item 5.2 which discusses the need to refine the definition of municipal solid waste in the *Renewable Energy Act, 2000*.

3.4 Survey of Collection Depots

The report *Container Deposit Legislation* (Phil Hudson Consulting, March 2000) summarises the economic and environmental impacts of the beverage provisions of the Environment Protection Act 1993 (Container Deposit Legislation (CDL)) in South Australia.

The major objective of this study was to provide quantitative and qualitative data regarding the container deposit system and to provide a detailed cost/benefit analysis for the State in relation to numbers of people employed directly as a result of the system in operation within the industry, follow on employment levels within the recycling industry and the economic and environmental benefits arising to the State as a result.

Collection Depots are established under South Australia's Container Deposit Legislation (CDL) to collect refundable beverage containers and pay refunds. Only 19% of Collection Depots responded to the survey. The survey identified that surveyed Depots employ 158 people, a large proportion of which are part time employees. In addition, they identified 91 casual/seasonal positions (80 of these were with one organisation). Assuming that the sample is representative of this sector, it is estimated that, in total, the State's Collection Depots employ 820 people in full and part time positions. In addition, it is estimated that the Collection Depots could provide up to another 200 casual positions throughout the year.

South Australian Input-Output tables and multipliers were used to calculate the follow on employment impacts of CDL. Employment multipliers were used to measure the additional (or indirect) employment impacts resulting from the original (or direct) employment attributable to CDL. In view of the above assessment, and an employment multiplier of 2.1, it

is estimated the total employment impact of CDL in South Australia to be 1,700 jobs, including full time and part time jobs in the same proportion as that in the collection depot industry.

3.5 Tourism

In the report *Selected Issues in the Economic Contribution of Tourism in South Australia* (Economic Research Consultants, 2001 (Unpublished)) results indicate that for the year 1999 tourism motivated by nature and national parks resulted in \$225 million of visitor expenditure in SA, value added of \$105 million and the employment of 1,770 FTEs. The modeling adopted a *Delphi approach* in which a panel of industry experts determined the distribution of visitation between motivational categories.

In the report *Assessment of the Economic Impacts of the Protected Areas of Kangaroo Island, National Parks and Wildlife*, July 2002 (unpublished), the Department for Environment and Heritage identified the jobs and incomes associated with nature based tourism on the Island.

The analysis, undertaken by Hudson Howells in association with Economic Research Consultants and Professor Trevor Mules, identified the following indicative values relating to the economic evaluation:

- The tourist spend associated with tourism to Kangaroo Island is estimated at \$81 million for 2001.
- The expenditure by tourists that occurs on the Island itself is estimated at \$53 million (ie: 65% of the total spend) – this leads to income creation (in terms of value added) on the island of \$40 million, wages and salaries of \$20 million and 650 jobs.
- The attraction of Kangaroo Island as a tourist destination is estimated to contribute an increase in value added of \$38 million to the South Australian economy and support 550 jobs in the State. This represents almost 2% of the value of economic activity associated with SA tourism.

On the basis of the estimates above, tourism contributed an estimated \$57 million of turnover to Kangaroo Island businesses in 2001. This compares with the following:

- Annual production of some \$35 million in agriculture (this varies from year to year dependent on season and prices). Sheep production is around two thirds of the value and cereals the other major product – although there has been some diversification in recent years.
- \$5 million of turnover in manufacturing, distributed around 8 establishments, with 33 people employed.

Looking forward, the rate of growth of tourism could be expected to become even more significant. If Kangaroo Island maintained its share of expected growth in tourism expenditures generally, tourism expenditure on the Island would be estimated to increase by \$10 million by the year 2007, and support new employment of 130 people. Continued growth rates of two percentage points above the current levels would result in 220 new jobs on the Island – and a similar number created in the State.

Studies on nature-based tourism, particularly where they explicitly address the relative contributions of tourism to agriculture and manufacturing, provide useful opportunity cost analysis of alternative activity bases (where the natural environment has retained the integrity required to develop nature based tourism opportunities).

Current and future employment around nature based tourism is a particularly interesting component of the environment industry in South Australia as it offers employment opportunities in regional South Australia. These opportunities, which are site specific and non-transferable, are most likely to be long term and capture local expertise and knowledge, including indigenous knowledge.

4. THE FUTURE POTENTIAL GROWTH, INCLUDING BARRIERS AND OPPORTUNITIES FOR GROWTH, OF ENVIRONMENTAL GOODS AND SERVICES, AND IMPACT ON EMPLOYMENT (T-O-R 2)

The potential future growth of the environment industry and corresponding job opportunities depends to a large extent on the legislative driver for innovation. The following areas of growth potential can be seen to correlate most directly to areas where there is growing regulatory imperative (either globally or locally) or where direct observable evidence of severe environmental degradation exists.

On this basis, the strongest growth has been in the renewable energy areas. Expansion in this area reflects current policy initiatives at the Commonwealth level as well as recognition of natural advantage in key areas such as wind and solar and a commitment by the South Australian Government to lead in these fields.

4.1 Resource recovery industries

A recent economic analysis of the value to South Australia of diverting green organic material away from landfill towards reprocessing and reuse activities (based on capture of up to 100 000 tonne/yr) identified 115 new jobs through this activity (Nolan ITU Pty Ltd, Jan 2002, *Organic Waste Economic Value Analysis Final Report*).

The classification of municipal solid waste as a renewable energy source in *the Renewable Energy Act, 2000* potentially reduces the growth of recycling industries. This issue is discussed in more detail below in relation to policy measures that could encourage the further development of the sector.

4.2 Renewable Energy sector

A recent Greenpeace report (Greenpeace, 2002) identified that clean energy industries create more employment opportunities per dollar invested than non-renewable energy sources such as fossil fuels. The table below provides a comparison of jobs for A\$million invested and jobs per unit of energy produced – comparing fossil fuels, renewables and energy efficiency.

Table 1: Direct employment per million dollars invested

Technology	Jobs per A\$ million invested
Oil Shale (1)	0.5
Solar Electric (2)	3.5
Energy efficiency (3)	35-50

Table 2: Direct Employment per unit of energy in Energy Technologies

Technology	Jobs per million megawatt-hours per year produced
Oil Shale (4)	46.3
Coal mining and power generation (5)	116
Solar thermal electricity (6)	248
Wind (7)	542
Energy efficiency (8)	400 – 860

“Jobs and the Oil Shale Industry”

<http://www.greenpeace.org.au/climate/archive/nonewoil/jobsbrief.html>

The Office of Economic Development in South Australia has recognised the significant economic growth potential of renewable energy and has taken a pro-active approach to the development of this industry in South Australia. This has occurred across a range of renewables including wind, solar and bio-diesel. Recent economic analysis by the Office of Economic Development is summarised below.

- The South Australian wind profile has been assessed as the best in mainland Australia. Based on development of this natural advantage, a number of wind farms (totaling 1,500 MW of energy) are in various stages of planning for the next 10 years.

Wind farm installation in South Australia has been identified as potentially creating significant employment benefits such as 2,250 FTE during construction, 450 FTE ongoing primary jobs and 3,375 FTE ongoing secondary jobs.

- Wind farm blade and nacelle manufacturing would result in the creation of 600 FTE for building and construction and approximately 597 ongoing FTEs.
- Estimated value of an export industry to South Australia from a Photovoltaic Cell Manufacturing Plant would result in 200 ongoing FTEs.
- A Bio-fuel manufacturing plant with 150,000 tonne crushing plant and 60 million litre capacity bio-diesel production facility, at an establishment cost of approximately \$40m, would result in 40 – 50 ongoing FTE for South Australia.

4.2.1 *Barriers to growth in the Renewable Energy Industry in South Australia*

4.2.1.1 *Transmission*

The existing transmission network in South Australia is constraining the expansion of the wind energy industry due to the distance of wind farms from the existing network and the inability of the existing network to accommodate additional and fluctuating energy loads. This is evidenced by the recent Electranet application to the ACCC to spend \$500m on upgrades to the infrastructure. Whilst the Electranet proposal does address some of the upgrades needed to ensure access to the grid and ability to accommodate fluctuating demand, it is essential for the rates of return to be reasonable for proponents to pursue this investment opportunity.

There are significant economic returns to be gained to the State from upgrading the transmission network. An example of this is the facilitation role being undertaken by the Office of Economic Development, which has brought three developers together with the view to augmenting the transmission infrastructure on the Eyre Peninsula to enable each of the farms to develop. This work could result in \$800 million investment in wind farms and \$200 million in transmission augmentation. The economic impact to the region of this investment is expected to be significant and will lead to further development of the aquaculture industry, food processing and mining industries.

Unless the connection issues are resolved, the extraordinary costs associated with augmenting the network may reduce the number of new wind farms.

4.2.1.2 *Planning and Environmental Regulation*

The renewable energy industry in Australia is facing increasing uncertainty as a result of planning and environmental protection processes. Additional process (the rise of major project status for wind farms, including EPBC Act referrals) and project requirements (i.e. reduction of turbines, underground transmission, noise levels) are being placed on projects which increase uncertainty and reduce project viability. The unreasonable protection of landscape amenity and imposition of excessive buffer distances has the potential to reduce significantly the growth of the industry and its associated job creation and greenhouse gas reduction potential.

4.3 **Cleaner Production and Eco-efficiency**

A Pollution Prevention Fund (PPF) was used in South Australia between 1994–1998 to provide assistance for the implementation of cleaner production, eco-efficiency and recycling projects by local industry. Over 50 businesses and industry associations received approximately \$1.5 million in funding. Environmental benefits identified included the following resource savings.

- Water - 98,000 kilolitres
- Electricity - 1,005,000 kilowatt hours
- Gas - 489,000 megajoules
- Chemicals - 54,000 litres
- Tyres - 500 tonnes
- Plastic - 8 tonnes
- Sand (foundry) - 2,000 tonnes

A 'one off' outlay of \$1.15 million resulted in annual value added benefits to the local economy in excess of \$2 million pa (including both direct and flow-on impacts). The overall benefit/cost ratio for these projects is 36:1. The projects that have been supported by the PPF have generated 94 jobs (including both direct and flow-on impacts) (Cole and Hudson, 1999, Economic Benefits of Pollution Prevention Fund).

4.4 Tourism

Research analysis demonstrates that whilst SA performs well in many aspects of tourism for a State of its size, it nevertheless misses out on its share of the market in terms of visitor numbers, length of stay and expenditure.

This has significant implications for the economic performance and unrealised potential of the industry. Research shows that South Australia is not readily associated with nature-based tourism.

Whilst the State has excellent nature-based attributes, the tourism infrastructure that facilitates the visitor experience is not well developed. Improved infrastructure would change consumer perceptions of SA as a tourism destination, would keep them here longer and would encourage greater expenditure.

It is for this reason that the Draft State Tourism Plan 2002 - 2007 places priority emphasis on improving the State's destination appeal and 'guaranteeing' a rewarding experience for the visitor. Copies of Plan are available on www.tourism.sa.gov.au.

South Australia's tourism vision is to be an inspirational leader in innovative and sustainable tourism. It encourages authentic 'derived', rather than 'contrived' tourism development. One of the key objectives in the Plan is to strengthen the State's nature based` experiences.

In a report prepared by Barry Burgan, Economic Research Consultants, in 2002 (Burgan, 2002), the estimated level of expenditure and economic activity are forecast to 2007. The results indicate a significant employment potential, based on a constant policy scenario. The jobs growth will be even higher if a policy commitment to the implementation of strategies in the South Australian Tourism Plan leads to an increase in visitor numbers, length of stay and spending in this sector.

The analysis assumes SA maintains its market shares of future tourism market growth (4.5% in international nights, 1.9% in interstate nights, 1% intrastate nights²). It also assumes price inflation of 2.5% p.a.

- This report estimates that tourism spend will reach \$4.5 billion by 2007.
- Using the export component of the expenditure (international and interstate), results in an extra \$640 million by 2007 (from \$1.7 billion of GSP in 2001 to \$2.3 billion in 2007) and 4,834 FTE jobs created (from 26,038 in 1999 to 30,872 in 2007). That is \$132,000 per new FTE job.

² Based on Tourism Forecasting Council forecasts. The TFC does not separate interstate and intrastate components (ie 1.9% pa overall growth in domestic nights). This is conservative in that interstate growth assumed to be the same as the domestic average and intrastate less at 1%.

- Assuming that 7% of the increase is in the nature-based sector as is currently the case, then there would be an extra \$45 million and 340 FTE jobs associated with nature-based sector by 2007. This could be considered a lower bound estimate.
- If it is assumed the Australian average of \$77,300 tourism expenditure³ per FTE job, then there would be an additional 580 jobs in the nature-based sector by 2007.

4.5 Natural Resource Management

One of the issues in the environment industry which pertains particularly to the natural resource management sector, is the proportion of funding which is derived from grants which are made available on a competitive, project basis for a limited period. This means that people are employed in temporary positions which are often remunerated at the lower end of the career scale to minimise project costs. Such officers frequently lack professional support and have limited career opportunities.

For example, projects under the Natural Heritage Trust (NHT) during the past 5 years have involved the employment of approximately 800 South Australians each year. These projects and the associated term of employment of staff vary in length from 3 months to 3 years (subject to annual review of budgets) and has resulted in a climate of uncertainty, lack of job security and resulting high staff turnover and lack of project continuity.

In response to this dilemma the South Australian government has sought to build connections between State agencies and regional NRM initiatives that optimise the provision of support to regional bodies by the in-house provision of support staff dedicated to the task of providing professional advice and support to those bodies. Such officers have access to agency data systems, technical expertise and are more likely to be cognisant of policy imperatives. They also tend to have a wider selection of career opportunities and greater confidence that their employment will extend beyond the next 3 month contract. There is therefore an increased probability of project continuity, greater retention of corporate memory and hence improved project delivery and better outcomes.

5.0 CURRENT STATUS AND FUTURE REQUIREMENTS FOR AN APPROPRIATELY SKILLED WORKFORCE (T-O-R 3)

Although no specific details have been provided in relation to the status and requirements for workforce skills, the expected continued growth of environment related industries makes it imperative for Governments, universities and industries to keep abreast of the growth and any gaps and reassess requirements and programs accordingly.

Further, the South Australian Government recognises that environmental industries such as aquaculture and fisheries are becoming increasingly popular in South Australia's regional areas and for regional young people. Consequently schools, Technical and Further Education campuses (ie TAFE's), universities and other educational and training institutions have a major role in ensuring that there is a steady stream of skilled personnel available for industry development.

³ BTR (Bureau of Tourism Research) 1 billion expenditure = 12,933 FTE jobs

Campaigns directed at young people which emphasise environment related industries as viable career options need to be developed. Similarly, creating clear-cut transitions and pathways from education and training into environmental industries is another important area.

Recommendation 2: That the Commonwealth commit, with States and Territories, to a national campaign directed at young people which emphasise environment related industries as viable career options.

6.0 APPROPRIATE POLICY MEASURES THAT COULD ENCOURAGE THE FURTHER DEVELOPMENT OF THE ENVIRONMENTAL GOODS AND SERVICES SECTOR (T-O-R 4)

6.1 Participation in International Discussions relating to the Kyoto Protocol

6.1.1 Participation in international Kyoto Protocol mechanisms

The Kyoto Protocol will establish flexibility mechanisms: the Clean Development Mechanism, Joint Implementation and International Emissions Trading. There appear to be a number of benefits associated with Australia being a signatory to the Kyoto Protocol in order to participate in these. The Commonwealth Government proposes that Australian companies participate in these via offshore linkages. However emission credits that are generated by companies within Australia through a form of shadow trading will not be eligible for trading internationally.

6.1.2 Economic opportunities

Some Australian businesses have indicated concern that as Australia remains outside the Kyoto Protocol they will be excluded from participating in business opportunities. Environment Business Australia, a peak body representing Australia's environmental management industry, identified the loss of potential overseas opportunities as a very significant cost.

Some environment companies have indicated their intention to relocate off-shore to assign projects to related companies overseas. Examples include the Sydney based Asian Environmental Rehabilitation Corp, involved in \$200 million waste project in China which may relocate to Europe because it could not claim the expected 2 million tonnes in saved emissions (*Australian Financial Review*, 6 June 2002), and the Perth based Advanced Energy Systems which supplies renewable energy projects in India and other nations which would be likely to move its operations offshore (*Australian Financial Review*, 3 March 2002).

6.1.3 Innovation and emerging industries

Climate change will require innovative solutions and will stimulate the development of new products and services. Through measures to address climate change, BP for example has generated US\$650 million in business internationally. Transitional technologies based on natural gas and low emission coal will develop while the country moves towards a hydrogen-fuelled economy and the de-carbonising of the economy over the next several decades.

Recommendation 3: That the Commonwealth commit to increase the Mandatory Renewable Energy Target from 2% to 10%, thereby bringing Australia into line with leading international renewable targets and opening further opportunities for renewable energy producers and support industries.

6.2 Changes to Renewable Energy Legislation to support industry growth

The “waste hierarchy” is a nationally and internationally accepted guide for prioritising waste management practices with the objective of achieving optimal environmental outcome. The “waste hierarchy” sets out the preferred order of waste management practices from most preferred to least preferred and advocates that reduction, reuse and recycling is more preferred to recovery, treatment and disposal.

However, the *Renewable Energy (Electricity) Act 2000* specifically includes municipal solid waste (kerbside waste) as a renewable resource. If domestic solid waste and green organic material is deemed a renewable energy source, the energy resulting from this can be sold at a premium based on its green credentials. This then acts as a major economic disincentive to the development of resource recovery industries and is highly likely to distort the market against recovery and reuse of these materials.

An economic assessment of kerbside recycling (Nolan-ITU, 2002, XII) concluded that the kerbside waste-to-energy option shows a reduction in the net environmental benefit and an increase in cost to households (of approximately \$5 per year) when compared with reprocessing of materials.

In Japan, for example, the use of waste as a feedstock for energy generation has resulted in fledgling recycling initiatives competing with over 1,200 well established waste-to-energy plants already in operation. In recent years, the Osaka Environmental Projects Association (EPA) (a non-government not-for-profit association) took up a waste minimisation focus to reverse the waste to energy trend and to encourage further recycling.

In certain circumstances, not all waste can be used for reuse or waste to energy, and so alternative uses need to be available. In particular, many putrescible wastes (eg food) are not currently capable of being recycled and it would therefore be more appropriate for this waste to serve as feedstock for waste to energy.

In direct employment terms, waste-to-energy plants are capital intensive and have significantly lower ongoing labour costs when compared with resource recovery industries. Resource recovery initiatives provide significantly greater ongoing job opportunities and improved long-term environmental performance.

Recommendation 4: That Municipal Solid Waste be re-defined in the *Renewable Energy Act, 2000* - Section 17 (1) (k) to consider appropriateness of waste types based on broader sustainability principles.

7.0 INFORMATION AND REPORTING SYSTEMS THAT WOULD SUPPORT THE UPTAKE OF ENVIRONMENTAL GOODS AND SERVICES TO ENHANCE OVERALL BUSINESS PERFORMANCE AND DEVELOPMENT OF THE SECTOR (T-O-R 5)

"I believe that ... voluntary public reporting promotes greater transparency for ... companies, and improves community confidence in our sector as a whole. It follows, therefore, that institutions in our society that rely on community confidence - such as government departments, media outlets, and community based organisations - might well

consider embracing the highest standards of public reporting on matters such as environment, safety, and community relations."

Hugh Morgan
Chief Executive Officer, WMC Ltd.
www.globalreporting.org

Reporting of environmental performance is recognised internationally as being central to the management of environmental impacts and the assessment of environmental industries. Essentially contemporary management practice accepts that "you manage what you measure".

Over the last decade, there has been an increasing emphasis on sustainability reporting initiatives that aim to integrate environmental reporting within a broader ESD framework. These include Triple Bottom Line reporting, the Global Reporting initiative and Corporate Social Responsibility reports. The aim of these sustainability reporting initiatives is to establish reporting structures which are as timely, credible and consistently sound as financial reporting.

South Australia currently holds 8.2 per cent of Australia's total ISO 14001 certifications with considerable more businesses implementing EMS of various forms. SA recognises the growing requirements for business to adopt EMS in order to satisfy supply chains ISO 14001 and avoiding litigation by strengthening environmental due diligence.

Education, assistance, and environmental licensing policies that encourage the up-take of EMS/ISO14001 will act as a significant catalyst for generating environment industry jobs.

While these reporting mechanisms are positive and necessary steps towards sustainability, and to be promoted and accelerated by the Commonwealth and State Government policy and programs, the lack of agreement on key environmental performance measures (and primary information) inhibits the widespread uptake of these initiatives.

One of the key challenges facing credible and timely sustainability reporting is the distillation of a large range of environmental measures and indicators into a manageable number of comprehensive indicators that in form and simplicity mirror the financial and economic measures. The Ecological Footprint technique provides a mechanism for overcoming this mismatch in scope and detail between environmental and financial reporting measures.

7.1 Ecological Footprint Technique

Ecological Footprinting is a vital technique in advancing sustainability because it helps people to incorporate ecological limits in their perception of the world by aggregating human demand and linking it to finite global carrying capacity.

The Ecological Footprint enables an understanding of sustainability in a way that is measurable, intuitive and grounded within ecological realities. Because the Footprint is an accounting tool based on physical rather than monetary data, it provides crucial information pertaining to resource use and ecological limits which is absent from conventional economic analysis.

...market scarcity and ecological scarcity are increasingly separate phenomena, the former representing the immediate supply on the market (as expressed by market prices), the latter giving an indication of total existing stocks (as expressed in biophysical accounts). As global trade delinks market

scarcity and ecological scarcity, the healthy and necessary feedback loop between ecological capacity and human consumption is broken...

Wackernagel, 2000:9

As the demand for biological capacity (biocapacity) grows while the supply shrinks, tracking use of nature is imperative both for countries with an ecological deficit who are dependent on imported carrying capacity, as well as for ecological creditors who are supplying the debtors with biocapacity, often through liquidating their own natural capital.

This applies equally to companies and investors as well as countries. Businesses who do not take steps to reduce their Footprint and improve their eco-efficiency are potentially exposing themselves, and consequently their shareholders, to economic risk in the long term.

Many businesses have already recognised this, and are taking appropriate steps by incorporating the use of indicators such as the Footprint. In the UK, the Association of Chartered Certified Accountants commissioned a report entitled 'Ecological Footprint Analysis: Towards a Sustainability Indicator for Business', and Anglian Water is using the Ecological Footprint to inform decisions about capital investment - it is anticipated that the Footprint methodology will be used to inform decisions, influence regulators and understand the overall impacts of the company's activities on the environment.

The Footprint also featured in commissioned feedback from Paul Hawken and Mathis Wackernagel to the Global Reporting Initiative, convened by the Coalition for Environmentally Responsible Economies (www.ceres.org) in partnership with the United Nations Environment Programme, which is developing globally applicable guidelines for triple bottom line reporting at the organisational level.

The Ecological Footprint is an ideal sustainability indicator for environmental reporting, because it:

- monitors environmental trends in relation to a threshold ie. the carrying capacity of the planet
- shows how ecological impacts are occurring far beyond the location where demands are generated
- tracks cumulative impacts at the regional, national and global levels.

Because of its simplicity, the Ecological Footprint can be analysed alongside profit, revenue, debt to equity ratios and other accounting indicators. The assessment of monetary indicators alongside biophysical indicators can provide the foundations for a Commonwealth Triple Bottom Line report where the interaction between these variables can be utilised in the sustainability policy formulation and assessment process. A National Ecological Footprint report would clearly link ecological capacity and human consumption and would provide a more comprehensive assessment of national wealth and prosperity in the national accounts.

"Redefining Progress" (Oakland California) has undertaken an analysis of Australia's Ecological Footprint as part of a global investigation of various countries. Accordingly, the Commonwealth Government could agree to further investigate the merits of using this data in the national State of the Environment Report and national accounts. Likewise, the analysis could be expanded to state and territory levels for incorporation in state reports and state accounts.

Recommendation 5: That the Commonwealth:

- **further investigate the merits of incorporating Ecological Footprint concepts into the national State of the Environment Report and the national accounts (ie as a counterbalance to Gross Domestic Product in assessment of national wealth and prosperity); and**
- **encourage other sectors and other governments to investigate the merits of the Ecological Footprint as a decision/policy making tool and its applicability to Triple Bottom Line reporting.**

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ADDITIONAL INFORMATION HELD BY THE SECRETARIAT

Attachment to Submission No. 32 – South Australian Government

1. Attachment – (Introduction) South Australian Government Submission September, 1993 on *Inquiry into Environmental Policies which Stimulate Employment Growth*.
2. Attachment – (3.2 Survey of SA Environment Industry) *South Australian Environment Industry Survey 2001*, by Andrew Lothian, Environment Policy Office, Department for Environment and Heritage 2002.