Productivity Commission Inquiry into the Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies

Submission from the Department of Industry, Science and Resources

Introduction

The Government is committed to lifting the long-term sustainable rate of Australia's economic growth and creating employment. The Department of Industry, Science and Resources has a key role in increasing national prosperity by building on the competitiveness of Australian business and fostering excellence in Australian science and technology.

The principal matters dealt with by the department are:

- policy advice on the development of Australia's manufacturing and service industries including the tourism industry,
- policy advice on the development of Australia's mineral, energy, gas, petroleum and electricity industries,
- program delivery through AusIndustry to support the development of Australian industry through enterprise development and innovation support,
- policy advice on science, technology and innovation issues and responsibility for delivering science and technology programs,
- investment promotion and facilitation,
- industry economic research,
- energy and resources science research including geoscience,
- industrial property,
- analytical laboratory services;
- geodesy, mapping and surveying services,
- ionospheric prediction, and
- sport and recreation.

The Government's industry, science and resource policy objectives

The Government's objective in its industry, science and resource policies is to provide the conditions under which Australian industry can flourish. The approach outlined in the 1997 industry statement *Investing for Growth* aims to increase the efficiency and flexibility of the Australian economy and enable Australian industry to compete more effectively in global markets.

Investing for Growth, the Government identified a number of policies and programs aimed at improving business competitiveness, encouraging innovation and making investment in Australia more attractive so as to generate sustainable economic growth and employment opportunities.

Science policy aims to achieve excellence in basic research; long-term strategic research and development (R&D); research commercialisation; and continuing growth in in-house business R&D.

In its resources and energy policy statement *Minerals to Market*, the Government emphasised how Australia's substantial resources are vital to our industrial development. Policies and programs need to recognise the essential role of resources and energy in determining Australia's economic prosperity, international competitiveness and living standards.

The goals of the Department are:

- increased productive investment in Australia
- expanding market access for Australian business
- the maximising the national benefits of research and innovation, and
- improved competitiveness of Australian business.

The relationship of industry, science and resource policy to ESD

Departmental goals are entirely consistent with ESD principles. For example:

- the development of a strong, growing and diversified economy underpins Australia's capacity to enhance environmental protection
- the need to maintain and enhance international competitiveness in an environmentally sound manner is consistent with business pursuing world best practice outcomes
- whole of government decision making processes, such as the requirement for Regulatory Impact Statements, ensure an appropriate balance of economic, environment and social objectives in policy and program development processes related to industry, science and resources.

Attached are six specific examples of how ESD principles have been incorporated into DISR policy and programs covering:

November 1998

ESD Case Study 1 - National Greenhouse Strategy (NGS)

Objectives and expected outcomes

Australia's national greenhouse strategy has the objective of addressing Australia's international environmental commitments under the Framework Convention on Climate Change. It is the major vehicle for Australia meeting its greenhouse abatement target contained in the Protocol to that Convention negotiated in Kyoto, Japan in December 1998.

While Australia's greenhouse strategy contains measures to limit national greenhouse emissions, because of its comprehensive nature it also seeks to improve awareness and understanding of greenhouse issues, and to develop adaptation responses.

Program description and financial resources

The Government has, through the Prime Minister's statement "Safeguarding the Future: Australia's Response to Climate Change" to Parliament in November 1997, committed $180m. Commonwealth funding also exists for ongoing measures arising from the 1992 NGRS and subsequently.

The national greenhouse strategy reflects the Government's acknowledgment of the potentially significant impact of climate change on Australia's natural, social and working environment. It is based on a comprehensive approach to greenhouse, with a range of actions reflecting the wide-ranging causes of the enhanced greenhouse effect.

The measures under the strategy that DISR has responsibility for include:

- the Greenhouse Challenge Program in cooperation with industry. This measure was accelerated in the Prime Minister's statement of November 1997, acknowledging the fact that many more companies have already expressed interest in taking up the greenhouse challenge.
- the introduction of a National Energy Market which will facilitate the wider use of low emission energy supplies, such as cogeneration, gas-fired generators, and renewable energy systems. The Prime Minister's statement has seen this measure accelerated.
- the refocussed National Energy End Use Efficiency program to achieve more cost-effective and greenhouse friendly outcomes.

In addition, DISR receives appropriations for funding for a range of renewable energy initiatives and for energy codes and standards that are delivered by the Australian Greenhouse Office, located within the Environment and Heritage portfolio.

Implementation of ESD principles and assessment of ESD performance

Australia's national greenhouse strategy forms an important plank of the national commitment to ESD principles.

The National Greenhouse Response Strategy (NGRS) was first released in 1992. The Government has been finalising the review of the 1992 strategy (the National Greenhouse Strategy-NGS) and this will be released shortly. The NGS is to be further reviewed in 2002 or earlier if warranted.

ESD Case Study 2: Regional Tourism Program (RTP)

Objectives and expected outcomes

The Regional Tourism Program aims to *enhance the well being and welfare of the community through economic development*. The RTP provides $8m over four years and aims to facilitate tourism industry development in regional Australia to help diversify the regional economic and social base and contribute to employment generation. The program seeks to disperse tourists to regional Australia and with them, the associated economic and social benefits.

Program description and implementation of ESD principles

The RTP is a competitive grant program. Proposed evaluation will focus on the extent to which the RTP has achieved its stated aims.

The program activities help provide *equity within and between generations* through supporting tourism projects that minimise impacts in sensitive environmental and cultural sites. This helps manage the resource base for future generations and contributes to *the protection of biological diversity* in high-use natural tourism sites.

As well as the economic benefit of undertaking a defined activity (eg. regional employment creation potential), the *decision making processes* regarding grant allocation also consider, where appropriate, relevant environmental and social outcomes (eg. well managed tourism in protected areas; revitalisation of some regional economies). It is also desirable that proposed projects under the RTP fit within an existing regional tourism strategy, in which a range of activities are directed at achieving a common tourism development outcome.

Program funding may be provided to manage tourism in fragile environments, based on perceived *threat of serious or irreversible environmental damage* by a community or regional authority. There is a *global dimension* to the program where projects are supported in internationally significant places, such as World Heritage Areas that receive a high proportion of international visitors and offer opportunities to showcase best-practice tourism management strategies to a global audience.

The program encourages grant applicants to *consider growing and diversifying the economy* of their region through tourism development. Implementation of the program assists tourism development that contributes to the economies of regions.

The program is *cost effective and flexible*. A wide range of eligible organisations can be involved through the competitive grants process. The program is also flexible in the manner by which organisations can contribute through their participation (eg cash or an in-kind contribution) and in the wide range of projects it can fund (eg infrastructure, education/training activities, business skills development).

Broad community involvement is also a feature of the program. Diverse stakeholders are involved in the development of the program and its projects (eg Commonwealth, State and local governments; peak tourism bodies, various community groups). This contributes to

ensuring that a broad range of economic, environmental and social concerns are considered in program implementation and review.

World Heritage Areas

Tourism has been represented on the (WHA) Ministerial Councils for the Great Barrier Reef, Wet Tropics, Fraser Island and Northern Territory (Uluru-Kakadu).

As a signatory to the *World Heritage Convention*, the Commonwealth Government has an international obligation to protect, conserve, and present WHAs for this and future generations.
The 'presentation' of an area is frequently through tourism.

Tourism membership of the Ministerial Councils serves to ensure that the interests of tourism, including its development potential, are identified and managed in a sustainable manner. It is recognised that tourism's long-term success in protected areas is necessarily tied to balanced management of social, economic and environmental factors.

The tourism industry, when sensitively developed, can be a useful ally to protect the values for which a property is listed, including through public education and provision of high quality nature-based experiences in WHAs.

ESD Case Study 3 - Gene Technology

Objectives and expected outcomes

The Genetic Manipulation Advisory Committee (GMAC) is a non-statutory body responsible for overseeing the development and use of novel genetic manipulation techniques in Australia. It assesses whether such work poses potential hazards to the community or the environment and recommends appropriate safety procedures to the researchers and institutions proposing the work. GMAC also provides advice to other government regulatory bodies. GMAC produces guidelines for small-scale genetic manipulation work in contained facilities, large-scale genetic manipulation work in contained facilities, and releases of genetically manipulated organisms into the environment.

The membership of GMAC includes a wide range of expertise in fields that are relevant to risk assessment of genetic manipulation work, including molecular biology, ecology, plant genetics, microbial genetics, animal genetics, agriculture, virology, entomology and engineering. The Committee also includes lawyers and a lay member.

Program description and financial resources

The GMAC Secretariat is located in the Gene Technology Section of the Science, Technology and Innovation Division of the Department. GMAC is funded by appropriation. For 1997-98 the total appropriation for running costs for the Committee and Secretariat was $437 000. GMAC members are part-time and are paid sitting fees according to a Remuneration Tribunal Determination.

GMAC assesses proposals involving genetic manipulation work on a case-by-case basis. The Committee's Terms of Reference require GMAC 'to oversee the development and use of innovative genetic manipulation techniques in Australia so that any biosafety risk factors associated with the novel genetics of manipulated organisms are identified and can be managed'. The Terms of Reference also specify that 'the risk factors shall include those which are associated with the altered genetic capabilities of the manipulated organism and which may give rise to safety concerns in public health, occupational health and safety, agricultural production or about the quality of the environment'.

Implementation of ESD principles and assessment of ESD performance

In assessing proposals, particularly those involving release of genetically modified organisms into the environment, GMAC's focus is on ensuring that the proposed work does not pose unacceptable risks to environmental safety, including biological diversity. Many applications of gene technology have the potential to result in economic growth that is sustainable on ecological grounds. While GMAC does not conduct risk-benefit analyses of proposals, it does take into account the potential benefits, as well as the risks associated with proposals. The precautionary principle is applied in GMAC's assessments, and, to the fullest extent possible, long-term effects of proposals are considered in addition to short-term effects.

GMAC's processes for assessing deliberate release proposals provide an opportunity for public comment on proposals.

On 30 October 1997, the Commonwealth Government announced that it had decided to introduce a national regulatory framework for genetic manipulation work ('gene technology') toprovide statutory backing to the current system. The Government's proposed regulatory package includes introduction of new legislation to provide some statutory control of gene technology research and to provide statutory coverage of general releases of genetically modified organisms that are not covered by existing bodies. Negotiations to establish the new regulatory system are being coordinated by officers within the Science, Technology and Innovation Division of the Department.

A number of principles have been developed for the new regulatory framework for gene technology. According to these principles, the purpose of the regulatory framework is 'to realise the benefits of gene technology for the Australian community, industry and the environment, while ensuring human safety and environment protection, through regulation that is timely, science-based, consistent with Australia's international obligations and takes account of ethical and socio-economic concerns'. In line with the current regulatory system, therefore, the new system will observe the core objectives and guiding principles of the National Strategy for Ecologically Sustainable Development.

ESD Case Study 4: - Cooperative Research Centres (CRC) Program

Objectives and expected outcomes

Specific objectives of the CRC Program are to:

- Contribute to national objectives, including economic and social development, and the establishment of internationally competitive industry sectors through supporting long-term, high quality scientific and technological research;

- Capture the benefits of research by strengthening the links between research and its commercial and other applications through the active involvement of the users of research in the work and management of the CRCs;

- Stimulate a broader education and training experience, particularly in graduate programs, through initiatives such as the active involvement of researchers from outside the higher education system, and to enhance the employment prospects of students through initiatives such as involvement in major cooperative, user oriented research programs; and

- Promote cooperation in research, and through it a more efficient use of resources in the national research effort by building centres of research concentration and strengthening research networks.

Central to achieving the CRC objectives is the implementation of high quality management in research, development, education and training, particularly by ensuring effect strategic planning, human resource management, equal opportunity, training an devaluation by the Centres.

Program description and financial resources

Over the contract terms of the current CRCs, the Commonwealth will have committed close to $1.1 billion to the program. The commitment by partners to the various CRCs will total about $2.7 billion of which at least $640 million will have been contributed by industry. In 1998, funding of $138 million is being provided for 67 Cooperative Research Centres.

Cooperative Research Centres are collaborative research and education ventures which seek to develop strategic linkages between researchers and research users, particularly industry.

Program Focus

- Research, research training, education and commercialisation
- Basic, strategic and applied research and development

Discipline Focus/Coverage

The Program supports research with a primary focus on the natural sciences and engineering and their application, although it is recognised that the work of may CRCs will be multi-disciplinary and may involve contributions from other areas.

Any number and type of organisations are eligible to apply for CRC funding although the participating organisations must include at least one higher education institution.

Selection rounds for CRC's are planned approximately every two years to consider applications for new CRCs and from existing CRCs nearing the end of their contract period. All applications received by the closing date are assessed in a three-stage process. The assessment is carried out against 19 selection criteria. At each stage, decisions are taken by the Minister based on the recommendations submitted by the CRC Committee. The committee in turn bases its recommendations on the application and on information and advice provided by its expert panels at each stage.

On average, existing Centre receive about $2.2 million per year from CRC Program funds. The Selection Round guidelines require that the participants in each CRC contribute at least as much as is provided by Program funding. On average, participants contribute about 2.25 times the level of Program funding.

Implementation of ESD principles and assessment of ESD performance

There are currently 67 Cooperative Research Centres in operation. These are grouped into six categories depending on the area of research activity. These are Manufacturing Technology, Information and Communication Technology, Mining and Energy, Agriculture and Rural Based Manufacturing, Environment and Medical Science and Technology.

Several CRCs are directly concerned with researching aspects of ecologically sustainable development, namely the CRCs for:

- Sustainable Production Forestry;
- Sustainable Cotton Production;
- Sustainable Sugar Production;
- Sustainable Rice Production;
- Ecologically Sustainable Development of the Great Barrier Reef;
- Sustainable Development of Tropical Savannas, and;
- Sustainable Tourism.

All CRCs, with the possible exception of those grouped under the areas of Medical Science and Technology and Information and Communication Technology undertake their research programs in such a manner as to conform with the Guiding Principle of the National Strategy for Ecologically Sustainable Development, namely "The need to maintain and enhance international competitiveness in an environmentally sound manner…"

Ecologically sustainable development principles are the primary interest of some CRCs. In these cases, the ESD activities would form an integral part of the agreement between the Centre and the Commonwealth that all CRCs are required to sign. This agreement contains defined performance criteria that the Centre is required to report against annually to the Commonwealth. The application of such principles are then the responsibility of the Centre under the Commonwealth Agreement.

If the CRC has specific research targeted to ecologically sustainable development then the performance of the Centre in regard to such performance criteria are assessed by independent review panels during the first, second and fifth years of the operation of the Centre.

ESD Case Study 5 - Australian Surveying and Land Information Group (AUSLIG)

Objectives and expected outcomes

The Australian Surveying and Land Information Group (AUSLIG) is a business unit of the Analytical and Mapping Division in the Department of Industry, Science and Resources (DISR). AUSLIG employs 110 professional, technical and administrative staff, and manages external contracts for much of its service and product delivery. AUSLIG has quality assurance certification to ISO 9002.

AUSLIG is the Commonwealth Government's primary source of topographic, remote sensing and geodetic products and services and is responsible for:

- policy, standards and coordination associated with delivery of national and international land information programs;
- management of the national mapping, maritime boundary, remote sensing and geodesy programs; and
- implementation of the Australian Spatial Data Infrastructure (ASDI) at the Commonwealth level.

Program description and financial resources

AUSLIG receives an appropriation of around $26 million each year from the Commonwealth Budget and generates revenue of around $4.5 million each year from sales of products including maps, map data, aerial photography and satellite imagery.

Timely and reliable land and geographic information is arguably more relevant today than at any time in the past. With a growing world-wide emphasis on promoting economic and social development while preserving and protecting the environment there is an increasing need for improved availability of, and access to, relevant spatial data such as those displayed on maps.

A unique feature of the land and geographic information produced by AUSLIG is that it provides the definitive national picture. This data is available in consistent format across the continent. It is useful as a tool for resource (agriculture, forestry, etc.) management, predicting futures for agricultural productivity, predicting natural disasters, environmental management, and infrastructure planning and development.

Implementation of ESD principles and assessment of ESD performance

A number of AUSLIG's activities are specifically applicable to ESD principles – a brief outline of each follows.

Geodesy

Geodesy provides the positioning framework for all land-related applications and for monitoring any physical changes in the earth due to natural or human-induced processes. Data provided by AUSLIG contributes to the monitoring and prediction of climate change, natural disasters such as earthquakes and volcanic eruptions, and changes in sea level.

Mapping

AUSLIG provides mapping information in the form of paper maps and digital data for use in Geographic Information Systems (GIS) and other computer applications. AUSLIG's small and medium scale topographic mapping programs (1:250 000 and 1:100 000) provide Australia with its only national mapping coverage. The GEODATA range of digital map products provide positional information for features such as roads, railways, built-up areas, rivers, creeks and lakes, etc. This data can be linked with other layers of computerised information, including satellite imagery, census data or vegetation cover to produce customised, special interest maps of any area.

Remote Sensing

AUSLIG provides up-to-date satellite imagery through its operation of the Australian Centre for Remote Sensing (ACRES) which is the primary agency responsible for the reception, processing and distribution of remotely sensed satellite data. ACRES delivers products and services to; improve agricultural productivity, provide data on the current state of the environment, and allow assessment of damage from natural disasters such as drought, flood and fire. More importantly, ACRES provides access to 20 years of retrospective satellite data with which to analyse environmental changes and make comparisons with today's environmental conditions.

Spatial Data Infrastructure

In Australia, the concept of a national infrastructure, or framework, of geographic information is being pursued by the Australia New Zealand Land Information Council (ANZLIC), Australia's peak forum on land information matters. The implementation of the Australian Spatial Data Infrastructure (ASDI) is of immense significance and AUSLIG is taking a leading role at federal level in its coordination and development. The ASDI will improve the access to and useability of spatial data for environmental and other purposes. AUSLIG is supporting regional and global initiatives for spatial data infrastructures.

ESD Case Study 6 - Automotive Sector

Objectives and expected outcomes

The world automotive industry is under growing pressure to reduce the contribution of vehicle emissions to greenhouse gases and urban air degradation. The Prime Minister laid out the framework for an environmental strategy for the Australian motor vehicle industry in his statement of 20 November 1997, *Safeguarding the Future: Australia's Response to Climate Change*,. Key elements of the strategy include:

- A 15% fuel efficiency improvement target by 2010 over business as usual through negotiation with automotive companies
- Mandatory, model specific fuel efficiency labelling
- Harmonised noxious emissions standards with international standards by 2006
- Bringing forward the phase out of leaded petrol.

Program description and financial resources

Details of the strategy are presently being negotiated between Government and the industry. The Australian Greenhouse Office is the lead Commonwealth Agency. Industry Science and Resources is assisting with these negotiations to help ensure environmental objectives are reconciled with industry capabilities and market opportunities. Industry, Science and Resources is particularly involved in a review of fuel quality, and developing the National Average Fuel Consumption target (NAFC) targets for 2005 and 2010.

Implementation of ESD principles and assessment of ESD performance

The sustainable development agenda poses both opportunities and threats for the Australian automotive industry. Australia is well placed, for example, to exploit the potential of supplying light metal engines and components to the global automotive industry, these being important in reducing vehicle weight and with it fuel consumption and greenhouse emissions. And the Orbital Engine Company is at the forefront of developing direct gasoline injection technology, expected to deliver a threshold reduction in fuel consumption by conventional petrol engines.

Australian researchers and firms are more broadly engaged in a range of research and development projects that seek to reduce vehicle weight and friction, improve the efficiency of conventional engines, and develop new generation power technologies. Amongst the more important activities are those of the CRC for Casting and Alloy Solidification Technologies, partly funded by Industry, Science and Resources, and the Hybrid Car Project initiated and partly funded by the CSIRO.

Industry, Science and Resources has also part funded the development of the very successful *aXcess australia* concept car, which with its use of innovative design and new technologies has also demonstrated important initiatives in environmental design - most notably in its engine technology, its passive solar cells and its carbon fibre frame. This exercise in demonstrating the strengths of the Australian automotive sector has already led to a recognition of Australia's capabilities, with in excess of 135 component manufacturers being involved in the project.

The automotive industry has reached a critical point in its response to the challenge that has been brought about by increased regulatory pressure and awareness throughout the world of greenhouse issues. Whilst some companies will regard the development of the greenhouseagenda as a threat to future development, there are increasing opportunities for Australian companies to build on their strengths and to develop niche markets.

Industry, Science and Resources will continue to ensure that as the imperatives of sustainable development reshape the global automotive market, Australian industry and its supporting research can take advantage of the opportunities arising. It will also ensure these imperatives are managed in the Australian market in a manner that maintains the ongoing viability of the Australian industry.

ESD Case Study 7 - Invest Australia

Objectives and expected outcomes

Invest Australia is the Australian Government's national investment agency which promotes Australia as an investment location, facilitates major projects, and provides a wide range of services to companies seeking to establish or invest in operations in Australia.

From its 16 offices around the world, Invest Australia works closely with all Australian States and Territories and, overseas, through Australian embassies and through the international network of the Australian Trade Commission, to increase productive and sustainable investment in Australia.

Prospective overseas investors considering investing in Australia are encouraged to contact Invest Australia to discuss their investment plans and requirements and to take advantage of the services on offer. Similarly, Australian project proponents are encouraged to contact Invest Australia for assistance with locating overseas investors for Australian projects once the viability and advantages of the project are demonstrated.

Program description and financial resources

Invest Australia has a budget of approximately $11 million for its activities including partial funding of the National Investment Response Centre in cooperation with Austrade.

Invest Australia assists corporations and individuals at all stages of investment. This assistance includes:

- identifying and promoting investment opportunities in Australia;
- providing market information and advice on establishment costs;
- providing international benchmarking information on key operating costs
- finding the right joint venture partner or strategic ally;
- providing information on relevant foreign investment regulations in Australia;
- providing advice on and connecting investors with the right Federal, State, Territory or local government contacts;
- assisting with grants to undertake pre-feasibility studies for major investments; and
- Major Project Facilitation.

MPF assists companies through government approvals at all levels quickly and efficiently. Companies can apply to the Minister for Industry, Science and Resources for MPF status if their project has a total capital expenditure of over A$50 million; is commercially viable; and needs Australian Government approval(s) in order to progress.

Once MPF status is approved, Invest Australia:

- coordinates Federal and State/Territory Government approvals requirements and processes so they progress simultaneously as far as possible;
- identifies government policies, programs or entitlements that may benefit the project; and
- develops an integrated timeline for all Federal and State approvals processes.

During the initial contact with a prospective MPF proponent the project is examined for economic viability and the relevant line areas within the Department of Industry, Science and

Resources are consulted for their expert opinion on the project. Initial discussions with relevant Commonwealth agencies regarding expected approvals is also undertaken.

Implementation of ESD principles and assessment of ESD performance

Once a project has MPF status approved by the Minister, Invest Australia facilitates the approvals process by advising proponents of the likely government approvals requirements and processes. To date the majority of projects have been in the resources and forestry sectors and consequently have required Commonwealth environmental impact assessment under the *Environment Protection (Impact of Proposals) Act 1974*. Invest Australia recommends and initiates roundtable meetings with Environment Australia to ensure that project proponents are aware of the environmental requirements that must be met. As such Invest Australia does not in itself implement ESD principles, however it promotes these principles through the facilitation of Environment Australia's objectives. Proponents are also encouraged to participate in the Greenhouse Challenge Program.

Invest Australia also provides assistance for companies establishing their base for the Asia-Pacific in Australia through the Regional Headquarters Program. This assistance takes the form of tax incentives and immigration arrangements for executives and specialists and again is facilitated through Invest Australia. The assistance is provided to companies that have proven their economic viability and these companies may still need to meet wider Commonwealth approvals.

As ESD principles are not implemented as a specific objective but rather through the broader goal of encouraging economically sustainable investment into Australia no direct assessment of ESD performance is undertaken.