



# ENVIRONMENTAL RESEARCH & INFORMATION CONSORTIUM

PO Box 132  
Braidwood NSW 2622  
ABN 81 055 194 771  
Ph 02 4842 8182  
Fax 02 4842 8183  
Mob 0418 462 443  
rob@eric.com.au  
www.eric.com.au

Committee Secretary  
Standing Committee on Science and Innovation  
House of Representatives  
Parliament House  
CANBERRA ACT 2600

## SUBMISSION: MARKETING OUR INNOVATIONS.

Environmental Research and Information Consortium Pty Ltd (ERIC) has been operating since 1992 and undertaken R&D and innovation since this time. ERIC is a specialist knowledge company in the application of remotely sensed data (satellite and airborne) for environmental resource assessment purposes. ERIC has won numerous national, state and regional awards for R&D and innovation. However, the pathway to product innovation has been very difficult during the past five years due to increasing competition in R&D and commercial services from government agencies, and particularly Australian government agencies (eg. CSIRO, GeoScience Australia, Bureau of Rural Sciences (BRS), etc.)

There are major barriers to innovation for knowledge companies that try to be at the cutting edge of science, and particularly where this science (mainly natural resource science) has perceived primary *ownership* in public agencies. These agencies pay scant regard to the Trade Practices Act in competing for access to public funds or objectivity when reviewing private industry applications for funds. ERIC's experience is that there are major organisational, governance and financial factors that the Committee needs to consider in order to *open the gates* to private industry investment, innovation and growth. This is important for the nation as private companies are at the coalface in terms of service delivery and implementation of government policy on resource management and sustainability.

There is now a large number of independent scientists (non-public servants) who are available for work (many retired from CSIRO, etc.) and a resource that the nation needs to tap into for new science and innovation projects. There is a need for the Committee to examine the barriers for these people accessing public monies or other capital, business skills and knowledge, as an organised team or group of independent scientists. ERIC largely comprises these people (baby boomers) and assists these people to form new projects in sustainability science.

## BACKGROUND

Before outlining the specific examples of the barriers faced by ERIC since 1992 and how the Australian government can overcome these barriers, I would like to outline the key factors that have



militated against successful commercialisation of innovation in ERIC. The Committee must place a high priority on overcoming the barriers to innovation investment; otherwise the other issues before the committee will be irrelevant. The key factors that are barriers to innovation investment are:

1. The introduction of cost recovery into government science agencies in the 1970's has developed a culture in these agencies to vigorously and unfairly compete for access to public funds, and repress intellectual freedom and independence in companies where this intellectual work competes with public sector interests. This factor was addressed in the 2001 Productivity Commission Inquiry Report on Cost Recovery by Government Agencies (see pages 109-116) where it outlines the negative effects on industry innovation. This situation has not been properly addressed by the Australian government and continues to stifle industry access to public R&D funds (ie. from LWA, AGO, industry R&D Corporations, etc.). See Case study 3, page 5.
2. The current process of public funding for natural resource projects (eg. through the industry R&D corporations, LWA, AGO, etc.) is almost entirely commanded and controlled by a cartel of public agencies that have expectations for a certain % of the funds. This process results in public agencies running the science and innovation agenda based on the inputs of science, technology and models with little understanding of the output requirements, eg. innovation, commercialisation and implementation by industry.
3. Public scientists are reviewing applications by private companies for access to public funds (eg. the Australian Research Council, Australian Greenhouse Gas Office, etc.) where the reviewing scientists (often from CSIRO) are directly competing for access to public funds in the same area of science. There is undisclosed conflict of interest in this process whereby the public servant reviewer can reject well deserving proposals from industry and hijack research ideas from industry for the benefit of public scientists (See Case Study 2, page 4).
4. Public funding projects, including industry R&D Corporations (where public science interests predominate) will reject out of hand any science innovation in a private company that has not been published in a journal deemed to be acceptable to the public science sector (See Case Study 1, page 3).
5. The Cooperative Research Centres (CRC) Programs are largely supported by the research interests of large corporations to the point where the CRC's are primarily the outsourced R&D departments of the large corporations. These programs are not good for supporting national innovation priorities, the overall public good (rather than just wealth creation for large corporations) or national interests (ie. skews the limited available public funds away from innovators in small to medium sized companies).
6. There is a cartel of public agency interests in the sources of public funds that flow within the so-called open competitive market, eg. GRDC, Land and Water Australia, etc. Public scientist control their belief systems in such organisations by maintain a tight grip on funds allocations and limiting independent science projects. The chances of a group of independent, non-public scientists winning access to any of these funds is near zero, without the group including a public sector agency or university to the bid.
7. There is a lack of independent scientific review of public sector science that relies on an in-house peer review system that is at best a *back slapping exercise*. For example, the public models for addressing salinity and greenhouse gas can be either shown to be flawed by evidence or are demonstrated to be deficient in science, however funding proposals from industry that aim to review these models are rejected out of hand.

8. There is a lack of public, government, bureaucracy and media acknowledgment of the intellectual capacity, research experience and financial investment by independent private industry scientists. Consequently, science and innovation funding (particularly in the natural resources area) is skewed to favour public sector interests and this situation unfairly restricts private industry access to public funds for R&D and innovation.

These barriers exist because the processes of public funding for science and innovation lacks independence, transparency, and adequate public and industry participation in the review processes. These issues are not unique to Australia. Recently there has been a call on the European Commission to support independent science. This call includes (from a SIS Press Release on 01 April 2005, <http://www.i-sis.org.uk/ISPF7.php>)

1. *Establishing broad funding criteria that put public interest ahead of 'wealth creation' (ie. in large businesses ,eg. genetically modified crops/foods)*
2. *Ensuring the greatest transparency, independence and public participation in deciding research priorities (ie. no member of any committee making decisions on funding priorities and areas should have, or should recently have had, a financial interest in the outcome of the decision being made. More than that, the membership of such committees must include scientists with relevant expertise who are not involved directly or indirectly in the research area to be funded).*
3. *Ensuring the greatest transparency and independence in deciding research funding (ie. no member of any committee making funding decisions on specific projects should have current or recent-past financial or commercial link with an industry involved in the proposal under consideration).*
4. *Ensuring support for independent science and scientists (ie. the increasing tendency to fund big research programs in big established research groups has served to reinforce entrenched scientific opinions that are often not in the public interest. This has resulted in the wrong decisions being made, excessive delays in applying appropriate regulatory or remedial measures)*
5. *Redistributing the research budget to give priority to science and technologies that contribute to sustainability in industry.*

All Australian science agencies that have a cost recovery requirement are in some way in competition with private companies for access to public funds for R&D, innovation and commercialisation. However, the current system of funds allocation does not provide a *level playing field* and in many cases the agencies do not operate their contracts and commercial practices within the requirements of the Trade Practices Act, accepted rules of governance or ethical business practices.

Against this background, I now outline examples where my company has experienced unjust treatment by Australian government science agencies in our pursuit of innovation and commercialisation.

## **ERIC CASE STUDIES**

### **Case 1.**

In 1992 ERIC commercialised a world leading technology to map soil properties (eg. soil conductivity/salinity) using airborne gamma-ray data. ERIC received many awards and recognition for this achievement over the next 10 years. ERIC produced over 70 technical papers and reports on this technology and presented the findings in numerous national seminars and conferences. ERIC also presented the evidence of the efficiency of the technology to the House of Representatives Standing Committee on Science and Innovation in 2003: Salinity Science Inquiry.

In January 2004, Land and Water Australia (LWA) produced a Report titled *Technical Report: Salinity Mapping Methods in the Australian Context (Spiers and Woodgate)* that concluded that gamma-ray data could not be used to map salinity. It also concluded that vendor claims (eg. ERIC) about its ability to map near surface salinity do not have scientific foundation. The Report promoted the use of airborne electro-magnetic (AEM) as the only effective technology for salinity mapping. Since this time the following issues have arisen:

1. It is now clear that the vested interests within CSIRO, GeoScience Australia, CRC LEME and the BRS that were promoting the use of AEM for salinity mapping had a clear intent to sabotage ERIC's commercialisation of gamma-ray technology.
2. The claims in the *Technical Report* are outrageously inaccurate and inappropriate for a government agency that failed in its duty of care to examine the evidence that ERIC has made publicly available for over a decade. The Chairman of the Report Committee (Woodgate) wrote to ERIC's Directors stating that ERIC's evidence would not be considered, as it had not been published in an appropriate scientific journal.
3. The Report Committee has failed to respond to ERIC's request to address specific concerns we had with the Report. Most members of the committee had a conflict of interest in that they had previously either promoted or were involved in the development of AEM.
4. The ACCC has advised ERIC that LWA may have a case to answer in respect of the Trade Practices Act (publishing misleading information), however the ACCC has further advised ERIC to firstly attempt to sort out this issue through political and bureaucratic processes. ERIC is still pursuing this line of action.
5. There was no conclusion in the Report of the House of Representatives Science and Innovation Inquiry into Salinity Science (June 2004) that gamma-ray technology could not be used for salinity mapping. However, LWA has not withdrawn its Technical Report or claims about the non-use of gamma ray for salinity mapping.
6. All salinity mapping work authorised by government agencies now excludes the use of gamma ray for salinity mapping and this has resulted in ERIC not being commissioned for such work since the release of the Technical Report. Consequently, ERIC's technology is being stifled by this Australian Government Report, even though ERIC's technology is the only technology that can accurately map salinity over regional and paddock scales, and at a fraction of the cost of AEM and other technologies.

This is a clear example of the lengths that Australian Government science agencies will go to denigrate science and innovation within private industry for their own commercial interests. This LWA Technical Report has caused significant damage to ERIC's scientific credibility and capacity to trade in salinity mapping. This may not have occurred if the Australian Government had a separate funding process for projects from independent scientists that facilitated public reporting and accounting of R&D results, independent review of public science models and an independent pathway to commercialisation for natural resource sciences.

## Case 2.

During the period 1999-2001, ERIC attempted through the Universities of Melbourne and Sydney to access ARC (Linkage Program) funds for further development of its gamma ray, salinity mapping technology. Both of these proposals were unsuccessful. It was only after further investigation that ERIC discovered that both of the public scientists who reviewed the proposal were undertaking competing research in CSIRO and BRS in support of the airborne electromagnetic technologies for

salinity mapping. One of the reviewers used highly defamatory language to discredit ERIC's senior scientist (who had previously served 23 years in CSIRO) and this reviewer did not provide any objective comment on the merit of the proposal. ERIC complained to the ARC based on the grounds of conflict of interest and poor governance, however the ARC was dismissive and only offered a compromise that one of the reviewers would not review ERIC's ARC proposals in the future.

I suspect that many private industry scientists suffer the same fate without realising the potential injustices due to the anonymity of the public servant reviewers who do not have to declare a conflict of interest. This situation may never occur where there is transparency and independence in the review process.

### **Case Study 3.**

In about 1999, the Australian government launched an Industry Action Agenda for the Spatial Information Industry. This Action Agenda resulted in a new industry Association (ASIBA) and the CRC for Spatial Information. Since this time there has been some growth in private companies that support hardware and software development, data sales and consultancy services to government spatial information services. However, there has been a major decline in business for the knowledge companies that undertake data processing or value-adding to remotely sensed data (eg. satellite and airborne data).

This decline in industry business has occurred because Australian government, state and local governments have established their own resources for processing and using remotely sensed data. In the past two years I have not seen a tender emerge from the Australian government for the processing of satellite data. During the 1990's this work from government (particularly Defence and the AGO) was the mainstay of R&D and innovation initiated projects in companies, such as ERIC.

The remote sensing, value-adding work within the Australian government is now undertaken by Defence (the largest employer for remote sensing operations in Australia), Geoscience Australia, Bureau of Rural Science (BRS), CSIRO, and others. In the case of Defence, there is no security reason why most of this work could not be undertaken in the private sector, eg. remote monitoring of land conditions on defence training areas. In this respect, the Action Agenda totally failed to support the remote sensing value-adding companies and effectively allowed Australian government agencies to kill-off any competition from industry.

This business change is driven by cost recovery pressures in government agencies and the desire for science agencies to command and control the capacity building of spatial knowledge. This ensures that science agencies can control the R&D, innovation and models for salinity, greenhouse gas, etc. and are not challenged by industry R&D and innovation.

The point of this case study is to highlight the fact while Australia invests \$10M of public funds into satellite and airborne data acquisition, there is inadequate remote sensing business in industry to drive independent R&D and innovation. Australia is already falling behind Asian R&D and innovation advances in the remote sensing, yet Australia lead this sector from the late 1980's until the mid 1990's.

ERIC has had to significantly change its business, R&D and innovation model to cater for this decline in business that should have grown significantly since the implementation of the Industry Action Agenda.

### **Discussion on these Case Studies.**

ERIC's technology for salinity mapping is a major innovation breakthrough for the Australian economy and demonstrates what can be achieved with a limited private industry budget and no public

R&D funds. However, such successes can be short lived when these technologies compete with the interests of the public sector, as is outlined in the Case Studies above.

There are major barriers to the creation of knowledge, innovation and commercialisation in the private sector when the major competition is from Australian government agencies that also control the science and innovation agenda for the nation.

## **POLICIES TO OVERCOME THE BARRIERS**

The types of Australian government policies that can overcome these barriers are:

1. The abolition of the cost recovery requirements for Australian government science agencies, and require these agencies to work within a fixed public budget (ie, no external earnings).
2. The reaffirmation of the role of public science agencies to support innovation in industry, as their first priority. This role currently conflicts with the operations of most science agencies that are driven by input demands (eg. science, technology, models, etc) and self-centred commercial interests, rather than the output requirements of industry, eg. commercial services to the public, export growth, innovation, etc. It is ultimately industry that drives the national (stock of common) good (ie. sharing ideas and knowledge and providing a useful service) to sustain growth and wellbeing.
3. The posting of public scientists to private companies to support R&D and innovation projects that should be bid for by private companies from a public pool for scientists. This scheme could also include a pool of private industry scientists whereby human resources are traded or allocated to private companies rather than cash grants to support R&D and innovation.
4. The creation of an independent science R&D and innovation funding program for independent scientists for at least natural resource projects. Alternatively, a similar result could be achieved by allocating at least 60% of all public natural resource funds (eg. within LWA, GRDC, etc.) to projects from independent/private industry scientists. That is, this 60% would be allocated to bids from industry that may or may not have a public sector partner. This would put the onus on public science agencies to align themselves with private company R&D and innovation requirements, rather than driving the agency agenda's or self- interests through the public funds system. This system would replace the CRC system that largely advances the R&D agendas of large corporations, at the expense of the innovative small to medium sized companies.
5. Implementing public fund allocation rules that require all public-funding decisions to be transparent with reviewers being independent of commercial interests and citing their name to reviews of private industry proposals.
6. The Australian government should organise another Innovation Summit, but this time ensure that the Summit is not highjacked by academia and bureaucracy. Academia and bureaucracy outnumbered industry at the last Summit and dominated the workshop sessions. There is a need for industry to be better organised (through Industry Associations) to manage innovation projects and award schemes, access public funds, secure the services of independent scientists and assist the government to develop a strong private industry science and innovation base in the economy. The control exercised by public scientists/bureaucrats through the Industry R&D Corporations is detrimental to industry development.

## **COMMITTEE ISSUES**

### **Pathways to Commercialisation.**

ERIC's experience in the pathway to commercialisation is that the cost of innovation is 4 times greater than the cost of R&D, and this reflects the nature of ERIC's business that is highly competitive against government agency services that are subsidised in the market place. Therefore, the private industry solutions have to be highly innovative and competitive to survive.

ERIC has to largely fund its own R&D and innovation due to the limited and restrictive access to public funds (as outlined above). This places a considerable capital burden and risk on the company, and this militates against long-term success and export of products and services.

ERIC's commercial pathway is aligned to sustainable development and its Directors undertake voluntary work as Directors on the Boards of the Australian National Sustainability Initiative-ANSI ([www.sustainability.net.au](http://www.sustainability.net.au)), Zero Waste Australia and Healthy Soils Australia. These non-profit organisations can be very supportive to ERIC's commercial ventures (and other like-minded private companies) through industry networking and providing access to joint R&D and innovation projects. This is achieved through the commercial research arm of ANSI: the Sustainability Science Team (SST). This arrangement certainly improves access to other independent scientists for project bidding purposes. The funding barriers outlined above still exist, even for SST, however this linkage arrangement does facilitate easier access to corporate, political and bureaucratic representations.

While ERIC does have access to other government programs such as COMET and other innovation funds within the Australian government's Industry portfolio, these programs are limited to specific stages of company growth (eg. emerging technologies or start-up operations). Also, these programs don't provide the same high profile or national focus that other R&D/innovation programs, eg, from LWA, AGO, Industry R&D Corporations, ARC, etc. where national level reporting and publication of the science should be critical factors in the commercialisation pathway to success.

National, regional and local awards for R&D and innovation are also critical factors in the commercial pathway to success. However, many of these award schemes are competitive with the R&D and innovation projects in the public sector that has considerable influence and promotional weight within the process. The Australian government could do more to facilitate industry only awards for innovation.

### **Intellectual Property and Patents.**

ERIC is particularly protective of its intellectual property (IP) and staff contracts reflect this protection. IP is the key to sustaining growth and a commercial edge. Commercial exposure through the following processes can stifle further success or increase competition risks:

1. Exposure of the IP in public bids for funds can result in ideas being sabotaged or stolen by public sector scientists.
2. Publication of detailed scientific information in public journals. However, ERIC does produce information sheets on technologies for the company website ([www.eric.com.au](http://www.eric.com.au)).
3. Patent application that can expose IP in an internationally corporate or global economy where patents are not safe from plunder.

Knowledge and technology is changing at such a rapid rate that time and money spent on patent applications, can be of very low value or return on investment (ROI). There is a lower capital risk in sustaining a continuous innovation process (eg. continuous improvement) than stalling at the patent

stage. However, individual consortia members and Directors within ERIC have made patent applications, at their own cost.

Much of ERIC's IP is initiated by contracts with clients that are looking for a new product and service initiative or breakthrough, eg. a method of remote sensing the ripeness of fruit, a method to convert boiler ash into a soil conditioner or an accurate method of locating sources of groundwater. Many R&D and innovation ideas come from small discussion groups with other independent scientists that have a desire to link and build alliances for R&D and innovation, that they would not otherwise achieve individually or in the public sector. This is why ERIC is linked to a number of independent *think tanks* on sustainability science, in the private or non-profit sectors. This process is very fluid and dynamic, and many ex-public scientists find this experience stimulating and beyond their experiences in public service.

ERIC generally has arrangements with business clients whereby ERIC retains the IP and these clients have first access to any new innovations. ERIC will not undertake R&D with public agencies where they require rights over the IP. Consulting scientists within ERIC sign confidentiality and implementation agreements that protect both parties and assign IP rights.

### **Skills and Business Knowledge**

ERIC operates as a consortium (no staff, only independent contractors) specifically because this arrangement provides the flexibility to access the technical skills and business knowledge required for each project, that often includes an R&D and innovation component. It is the composite of technical skills and business knowledge that creates IP, innovation and commercial success in a company. ERIC Directors will project manage and direct these skills and business knowledge to engineer IP and commercialisation, while allowing individuals to submit patents for their specific discoveries. However, the application of innovation in a commercial setting is a complex transformation process that only succeeds where the appropriate business skills and knowledge are properly managed and implemented.

This is why patents, technical skills and knowledge on their own do not guarantee commercial success. It is the internal and external business environment of a company that facilitates scientific advancement and innovation. This is why the Australian government has to imbue innovation firmly within industry and not in government agencies. Innovation, by its very nature requires the business skills and knowledge to transform ideas into commercial realities. Science and innovation in the absence of business skills and knowledge is of no value to a nation. Innovation (*the transformation of an idea into a commercial outcome*) is definitely not a function for government agencies or universities where their primary roles of public research and education are compromised by commercial activities.

### **Capital and Risk Investment.**

ERIC has always invested capital into high risk R&D and innovation. The extent that we are able to support this capital is linked to cashflow, profit and access to public grants or venture capital. However, we have not been able to rely on public monies because of the barriers in current funding processes (detailed above).

ERIC's primary source of funding is increasingly from corporations that are outsourcing their R&D and sharing the capital investment and risk with ERIC. This can be a long and drawn out process, but it is often the only option short of selling company shares to an investor to raise additional R&D and innovation capital.



In many respects, risk is linked to business skills and knowledge and the capacity of the company to manage risk. Unlike a public agency, risk management in a private company is an on-going task and underlies all decisions along the investment pathway to commercialisation. The capacity to carry risk is also dependent on available capital, ie. how long can you hold out to achieve the innovation objectives?

### **Business and Scientific Regulatory Issues.**

ERIC has no fundamental issue with current business and scientific regulatory requirements to manage either shareholder or public investments (eg. accountability). ERIC's key issue in this regard is that the competition from government agencies has little or no respect or knowledge of the same accountability or ethical requirements that are imposed on businesses by governments.

The frustration within ERIC with the behaviour of government agencies in respect of business and scientific practices (governance issues) are detailed above. ERIC would prefer that government agencies did not operate as commercial business (eg. cost recovery requirements) as it compromises their public service roles. Yet it is surprising the number of public scientists who accuse private industry R&D or knowledge companies of pursuing profit at the expense of public good.

### **Research and Marketing Linkages.**

ERIC only has linkages with private companies/corporations and independent scientists due to the lack of trust and confidence with public agencies (for reasons outlined in Case Studies 1-3). This is a by-product of the barriers explained above and while it limits our overall potential, it carries low commercial risk. This arrangement also provides the best possible linkages for future marketing effort as there are generally multiple or integrated commercial outcomes, where most of the parties have a specific product or service delivery interest in a market package.

Some potential linkages with corporations have not progressed due to ERIC's poor record in not securing matching public funds for R&D and innovation during the past decade. However, we will have to live with this situation, unless the public funding system for R&D and innovation is overhauled to provide transparency and project selection based on outcome values (ie. sustainability for the nation rather than the perceived science, technology and belief system values).

It is acknowledged that a considerable amount of public investment into R&D within public agencies will not see the light of day because of poor integration of this public process with industry, and the lack of industry confidence in public science agencies. For example, a Deloitte, Touche, Tohmatsu survey of 96 CEO's of technology companies found that 88% did not see a role for government in providing direct R&D (ie. CSIRO). This is a clear indication that the public R&D agencies have lost their relevance and value to industry on the coat tails of cost recovery. There is significant diminished confidence in CSIRO and other public R&D agencies to support the emerging technology and knowledge services companies. The issues of public IP, copyright, cost recovery and agencies (eg. CSIRO) taking equity in multi-nationals is at the core of this loss of confidence by industry in public science agencies.

The Committee should consider the special funding programs for independent science as proposed earlier in this submission as it is an effective means of tapping into older (usually 50 years +) and independent scientists, particularly as there is a shortage of young scientists entering the workforce in the fields of chemistry, physics and mathematics. Also, these older scientists are usually closer to the requirements of research and innovation in the marketplace, and the businesses that are capable of managing the R&D and innovation linkages, and IP and marketing.

### **Factors Determining Success.**

Undoubtedly, the key factors determining success for science advancement and innovation in industry is the capacity of private companies to manage technical and business skills/knowledge, capital and risk in the R&D and innovation processes.

ERIC has a good track record in this respect and the awards and recognition to demonstrate this success. Albeit that we have failed to secure adequate public funds for R&D over a 13 year period. This is why science and innovation projects should be selected with the weight of merit going to the capacity of the research managers to achieve the business success factors. Many public science agencies give undue weight to the input factors of science, technology and models (current belief systems) without giving credit to the capacity of companies to manage research and to be innovative (thinking deductively and outside of the square).

### **Strategies in Other Countries that may be of Instruction to Australia.**

The key strategies in other countries that Australia should take on board are:

1. In France, post doctoral graduates are required to undertake all further studies within industry/private companies for a period of at least 2 years. Australia should extend this to all public scientists to have at least 2 postings to private industry to learn about innovation processes, and business skills in commercialisation. This would place them in good stead to move out into industry or perform their public service research with a greater understanding of the outcome/output requirements of industry. Integration of public research and industry innovation is a key factor in economic growth and export development.
2. Many of the USA public agencies (eg. Department of Defense) allow private companies to retain IP from publicly funded projects. This process encourages further research and innovation and places the IP in the place where it most counts, eg. at the commercial edge or frontline. That is, CSIRO and other science agencies, should be accountable to the Parliament for their capacity to transfer ideas, knowledge and research to industry, not hold onto the IP and spin-off new companies.
3. As mentioned earlier in this submission the recent call on the European Commission to support independent science projects is a worthwhile strategy for this Committee to pursue. Ideally, it would be useful to have an Association of Independent Scientists that grew out of an Australian Government Action Agenda for independent science. Also, there would be significant national value in an separate public funding stream of R&D and innovation monies for independent scientists. This would enable them to undertake projects and review science that are generally taken for granted to reside in public science agencies (eg. natural resource sciences such as salinity, greenhouse gas, soil and water management, land use planning, etc.).

### **CONCLUSION**

The issues to be addressed by the Committee are overdue in Australia and critical to the future growth of science and innovation investment.

It is ERIC's strong view that the Australian government investment into science and innovation is severely diluted by public agency self-interests in accessing public additional funds through their cost recovery requirements. This confrontation of commercial interests between the public and private sector scientists militates against the public good interests and stifles the national integration of public science efforts with industry innovation efforts. This confrontation also limits the opportunities for

small to medium sized companies from undertaking a range of R&D that would normally reside in public science agencies.

It is critical that this Committee address the barriers to private industry investment into science and innovation and create a level playing field for industry participation.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Rob Gourlay', written in a cursive style.

Rob Gourlay  
Managing Director  
Environmental Research and Information Consortium Pty Ltd (ERIC)  
02-48428182  
rob@eric.com.au  
www.eric.com.au

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