TASMANIAN GOVERNMENT RESPONSE

TO THE

PRODUCTIVITY COMMISSION RESEARCH STUDY INTO SCIENCE & INNOVATION

June 2006

BACKGROUND

The Tasmanian Government initiated Tasmania *Together* in 2000. Tasmani*a Together*, is the state's community-driven, long term social, economic and environmental vision. Tasmania *Together* underpins major government policy initiatives including the government's Industry Development Plan and partnerships with local government, the University of Tasmania and other institutions.

The Department of Economic Development's Innovation, Science and Technology Unit is the lead agency in State Government with responsibility for policy formulation, decision making and program delivery relating to innovation and science and technology industry development.

The role of the Innovation, Science and Technology Unit is to create sustainable growth in Tasmania through:

- promoting an innovative business culture and a commercially focused research sector
- increasing the capacity of businesses to enable them to generate and capitalise on innovative ideas
- capturing opportunities and facilitating economic growth in the science and technology sector, particularly in priority areas such as ICT and biotechnology.

A comprehensive strategic review of innovation, science and technology was undertaken in December 2003 and an action agenda has been developed based on the strategic review report and strategic plan.

A large number of challenges in the Tasmanian innovation environment were identified through the review. These included:

1. Tasmania has a strong science and technology research sector but there is a need to ensure coordination and identify niche opportunities to strengthen industries through productivity and commercialisation gains.
2. Tasmanian research institutes have focused heavily on public-good research and relationships with industry are variable. Demands are increasingly being made for research institutes to commercialise and facilitate technology diffusion.
3. The supply of technical, commercialisation, business development, management, marketing, export and entrepreneurial skills are important challenges for industry in Tasmania. This trend is likely to continue given demographic changes and associated labour shortages.
4. Business and research institutions have limited dollars to invest in research and development, commercialisation and technology uptake, and access to capital at the appropriate stages of the commercialisation pathway is challenging.
5. Businesses and research institutions face issues associated with scale and scope. Collaboration and linkages are increasingly important in science, technology and innovation due to the expansion of knowledge and increasing specialisation.
6. Business innovation and investment in research and development (R&D) is comparatively low. Many Tasmanian businesses tend to be inwardly focussed with a short-term outlook. They are not planning for growth and increased productivity through investment in R&D, innovation and skill development activities.

7. The culture of innovation in Tasmania, as reflected by views on entrepreneurship, risk taking, learning from failure and recognition of success, needs to be promoted more widely, as does the commercial potential of Tasmania's research activities.
8. Barriers such as regulatory issues and bureaucratic processes delay access to market. Speed is increasingly important in an environment which in part relies on adopting technology developed elsewhere and in part developing niche products which satisfy market need.

The following linking six strategies were developed to address these issues:

Strategy 1 - Identify opportunities for economic growth within the science and technology research sector.

Strategy 2 - Identify and facilitate access to a range of skill development programs to assist with the commercialisation of ideas and research outcomes.

Strategy 3 - Stimulate a culture of innovation through the implementation of a range of targeted awareness raising and promotional activities.

Strategy 4 - Initiate and strengthen linkages and collaboration between businesses and between the business and research sectors.

Strategy 5 – Facilitate and provide access to funding for business innovation and growth.

Strategy 6 – Measure the performance and delivery and continuously improve existing programs, and introduce new programs and services to stimulate innovation and business growth and maximise outcomes from commercially orientated research activities.

PROGRAMS AND PROJECTS

Programs, projects and activities that align with these strategies were developed and are currently being implemented. Examples include:

Tasmanian Innovations Program

The Tasmanian Innovations Program was established in May 1999 with the commitment of $1 million per annum of State Government funds. The Program is intended to foster a culture of innovation in Tasmanian industry, in recognition of the key role innovation plays in driving economic growth.

Commercialisation grants provide up to $150,000 to companies which meet established eligibility and selection criteria on a competitive basis. At minimum the applicant must fund one third of the project (2:1 government:industry). Mentoring grants of up to $20,000 provide funds for companies to access an approved commercialisation mentor to address gaps in the businesses commercialisation plan. At minimum the applicant must fund one quarter of the cost of the project (3:1 government:industry).

Since 1999, the Government has committed over $4.7 million in grants to 61 Tasmanian companies. The Program has also supported the introduction of Enterprise Learning Programs in Senior Secondary Colleges, the University of Tasmania's Major in Entrepreneurship and the establishment of the Australian Innovation Research Centre.

Over the past three and a half years alone, nearly $2.9 million has been committed to 26 Tasmanian companies through the Tasmanian Innovations Program. These 26 companies have spent $1.7 million of this funding and, as a direct result, $6.5 million has been earned in revenue – representing more than $3.8 of sales revenue for every $1 of innovations funding.

Over 87 per cent of these sales were made to markets outside the State. In addition, 58 new full-time jobs were created and $8.4 million of additional investment was leveraged from the innovation funding. The companies invested an additional $3.8 million in new research and development activities.

Science and Technology Industry Development Program

During 2005 the Department piloted a small collaborative grants program, the Science and Technology Industry Development Program (STIDP). The program focused on increasing the level of research and development within the Tasmanian private sector and producing broad science and technology industry outcomes.

The aim of STIDP was to help organisations to create, use, diffuse and commercialise science and technology within Tasmania. The program was not intended to fund projects with single business outcomes or early stage research and development activities.

The program provided grants of up to $10,000 (in exceptional circumstances grants over $10,000 were approved) on a dollar-for-dollar basis. Preference was given to projects that fostered growth in priority sectors such as information and communication technology (ICT), biotechnology and Antarctic and marine technology. The program was allocated a budget of $90,000.

During the 10 month period that this pilot program was available, nine companies were granted funding and $98,875 was committed. Some early outcomes can be reported from the program. As at December 2005 more than $194,700 of additional investment was injected into the project from internal and external sources, 15 partnerships were established and $445,750 was expended on additional research and development.

Research Partnerships Program

In January 2005, the Department for Economic Development put forward a new budget initiative designed to encourage effective relationships between research providers and industry, and stimulate industry research and development activity with the aim of long term economic growth and new and smarter industries using innovative technology to achieve global competitiveness.

The Minister for Economic Development announced funding of $500,000 for a twelve month pilot in June 2005. The program opened in early October 2005. The objectives of the program were:

- increased investment in research and development by Tasmanian enterprises
- stronger linkages between Tasmanian industry and public sector research institutions, such as the University of Tasmania, CSIRO, and the Australian Antarctic Division
- a more commercially focused culture within public sector research institutions.

RPP supports viable collaboration between Tasmanian-based enterprises, and local and other research institutes, on a project basis. The maximum RPP contribution is set at $150,000 and requires, at minimum, matched expenditure from collaborators (1:1:1 - government: industry: research).

It was anticipated, during the development of the Research Partnerships Program, that initial up-take may be slow. This was due to a requirement that a partnership agreement be established between the industry applicant and their research institute partner.

During the seven months that this program has been available in excess of 35 companies have expressed interest in RPP. The department has received seven applications to date, four of which have been approved for funding committing the entire $500,000 program budget for the 2005/06 year.

As this program is very new, specific industry outcomes can not yet be reported. Program uptake, however, has exceeded expectations with all funds committed within six months of the program's commencement.

Market Ready Commercialisation Program

The Market Ready Commercialisation Program was piloted in 2001 and is designed for Tasmanian businesses that are commercialising innovative products, processes or services. Participants complete an introductory commercialisation session followed by eight intensive one-day workshops over a period of three months. Workshops enable businesses to develop strategy in areas such as intellectual property, marketing, financial forecasting, exporting, sales and distribution and investment attraction. The program is delivered by commercialisation experts who have considerable business experience as well as training experience. Coaching and an opportunity to pitch the project to potential investors are integral components of the program.

Currently 235 representatives from Tasmanian businesses have graduated from 16 rounds of the program held over the past five years.

A review of the Market Ready Commercialisation Program was conducted in early 2006. 225 graduates of the program were approached to participate in a survey and focus groups. Of the 112 respondents, 97% said they would be willing to recommend the program to other businesses, while 89% said that participation in the program benefited their business and enhanced the skills they needed to conduct business. A total of 74% of participants acknowledged that the program had helped the commercialisation of their innovation.

Respondents noted increased sales of more than $2,550,000 were directly attributable to the program. In addition, 130 new full time jobs were generated as a result of the program by 29% of interviewees. 53% of respondents indicated that they have undertaken further research and development activities since the completion of the program.

Interviewees reported that the topics of marketing (96%), production sales, distribution and intellectual property protection (71%) and go-to-market strategies (70%) were most valuable in progressing the commercialisation of their product, process or service.

The most common issues raised by respondents were:

- strong support for the program being continued and the program being made more widely available
- the course being offered to industry subsections such as ICT or agriculture businesses
- uncertainty about "what comes next?" and a need for mentoring or some form of follow-up program.

i-cubed Network

Collaboration and linkages are increasingly important in the knowledge economy. This is particularly the case in Tasmania where collaboration enables critical mass to be developed and sustained. The *i*-cubed Network brings together innovators, investors and intermediaries with the aim of investment attraction, strategic alliances and consortia formation. Typically the events are held at the close of the day and last for two hours with the first hour focused on presentations addressing a key theme or challenge faced by innovative businesses. Case studies from businesses relating to the successes and hurdles faced in commercialisation have proved popular. These are followed by refreshments and networking.

To date, since 2002, over 1700 people have attended *i*-cubed functions statewide. While difficult to quantify outcomes, a number of partnerships and investments have been reported to the department as a result of these events.

Measuring Tasmania's Innovation Performance

In December 2004, members of the Tasmanian Innovation Advisory Board (TIAB) met with members of the Tasmania *Together* Progress Board to discuss the use of a standardised set of indicators to provide a definitive assessment of innovation performance in the state. At this meeting the development of a Tasmanian innovation scorecard was discussed.

As a result, the department submitted a successful application for an out-posting statistical consultant from the Australian Bureau of Statistics (ABS) to investigate development of a Tasmanian Innovation Scorecard.

The specific objectives of the out-posting project are to:

- develop a set of innovation measures for Tasmania *Together* Goals 16, 17 and 19
- explore the development of a Tasmanian Innovation Scorecard
- explore the feasibility of reporting on Tasmania's innovation performance within the Competition Index.

The major output of the project will be a final report detailing project work and providing recommendations in regard to the development of the Tasmanian Innovation Scorecard.

Tasmanian Technopark Incubator

The Tasmanian Technopark Incubator, located at Dowsing Point Hobart, acts as a catalyst for the development, support and marketing of the technology industry in Tasmania. It provides assistance to start-up and existing businesses to accelerate growth, facilitate strategic alliances and encourage information dissemination and technology transfer with other organisations.

Currently the Tasmanian Technopark is considered to offer first generation incubation which includes rental rebates and administrative support.

A study jointly undertaken by the Department of Economic Development examined the feasibility of providing more modern business incubation services. A component of this study

involved the assessment of the demand for business services at the Technopark and across the State in general. This information formed part of a proposed *Incubation Operational Plan* presented to the Tasmanian Development Board in late 2005. The plan was approved and the Tasmanian Government has committed an assistance package be provided to enable a commercial operator to deliver enhanced incubation services including virtual incubation. A tender process is currently underway to locate a suitable provider.

Tasmanian Biotechnology Audit

IST hosted the Tasmanian Marine Biotechnology Forum in March 2004 to explore the opportunity for collaborative activity with over 50 key stakeholders in research, industry and government. An outcome of the forum was the agreement to undertake an audit of the biotechnology sector.

The audit has:

- Provided a detailed snapshot of the Tasmania biotechnology sector, focussing on agriculture, aquaculture/marine, food, environment and human health including genomics, informatics, and bioprospecting
- Assessed the current state of Tasmanian biotechnology focussing on performance, capabilities, opportunities in the sector and constraints that impact on the sector and
- Assessed the importance of biotechnology to user groups and to Tasmania's future economic development.

Three key sub-sectors have been identified where Tasmania has capability and commercialisation potential. These are:

- Marine Biotechnology
- Agricultural Biotechnology
- Human Health

Cooperative Research Centre Program

Industry development and commercialisation support has been provided by the Tasmanian Government to three Cooperative Research Centres funded through the Department of Education Science and Training's (DEST) Cooperative Research Centre (CRC) Program:

- Antarctic Climate and Ecosystems (ACE) CRC based in Hobart
- Smart Internet Technology (Smart Internet) CRC based in Sydney
- Forestry CRC based in Hobart.

The CRC Program was established in 1990 to improve the effectiveness of Australia's research and development effort. It links researchers with industry to focus research and development efforts on progress towards utilisation and commercialisation. The Tasmanian Government has piloted a number of mechanisms to support the commercialisation activity of CRCs.

Model 1 ACE CRC

The Tasmanian Government provided in-kind assistance to enable employment of a Commercialisation Manager on site at the CRC. The role of the Manager included:

- promotion of a commercialisation culture within the CRC
- identification of a range of applications for technology and facilitation of access to Tasmanian-based enterprises to partner
- development, management and marketing of commercial opportunities arising from the activities of the Centre.

Model 2 Smart Internet CRC
Cash contribution to subsidise the costs of Tasmanian-based enterprises' alliances with the CRC.

Model 3 Forestry CRC
In-kind commercialisation assistance, through participation of CRC staff on formal departmental programs and use of tools, including:

- Market Ready Commercialisation Program – a 10 day intensive commercialisation program
- Research Commercialisation Bootcamp (in collaboration with the Australian Institute of Commercialisation)
- access to online commercialisation tools.

These three pilots have stimulated the development of "Support for Cooperative Research Centres, Centres of Excellence and Other Research Collaborations in Tasmania: A policy framework for the Department of Economic Development".

Science and Technology Research Audit

In 2005, the Department of Economic Development commenced a science and technology research audit in partnership with the Tasmanian Science and Technology Council. The project responds to the identified need to establish a long-term framework to build Tasmania's research capacity, support key research initiatives and target research in areas where the State has a competitive advantage.

Phase I of the audit is near completion with both qualitative and quantitative information collected from 19 publicly funded organisations that have undertaken significant science and technology research in Tasmania.

Phase II of the project will involve an audit of the top 20 research and development focused private firms in Tasmania.

Once Phase II is completed, data will be analysed to provide a comprehensive overview of the scope and scale of science and technology research in Tasmania and the significance of this research to the State's economy. It is expected that the audit will:

- Provide an information base to support the Tasmanian Science and Technology Industry Plan and inform government decision making;
- Highlight why research is undertaken, how outputs are managed, disseminated and commercialised;

- Detail the present research facilities and infrastructure, as well as approaches to partnerships, advantages and constraints to conducting research in Tasmania, and likely future research areas; and
- Assist in clarifying Tasmania's research priorities.