

## **REVIEW OF THE NATIONAL INNOVATION SYSTEM SUBMISSION COVER SHEET**

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### **Organisation**

South West Group

### **Type of organisation**

Voluntary Regional Organisation of Local Government Councils

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### **Declaration of Interest**

Employee of the South West Group  
Member of the WA Defence Industries Skills Unit Board  
Senior Vice President of the Institution of Engineers WA Division  
Secretary of the South West Corridor Development Foundation Inc  
Member of the Australian Industry Defence Network Inc

## **REVIEW OF THE NATIONAL INNOVATION SYSTEM**

### **A SUBMISSION FROM THE SOUTH WEST GROUP**

#### **BACKGROUND ON THE SOUTH WEST GROUP**

The South West Group, formed in November 1983, is a Voluntary Regional Organisation of Councils (VROC). It comprises the Cities of Cockburn, Fremantle, Melville, and Rockingham, and the Towns of East Fremantle and Kwinana located in the South West Corridor of Metropolitan Perth.

The South West Group seeks to work with these six local governments and through cooperation with industry, community and the other spheres of government to capture a wide range of opportunities to enhance economic growth as well as supporting a diversity of quality lifestyles whilst servicing and sustaining cohesive, productive communities in an enviable environmental setting.

#### **SUBMISSION**

The capacity of any innovation system is characterised by skills, infrastructure, investment in research and development, connections to industry, technology diffusion, access to venture capital, resources and reputation.

Australia's innovation system is constrained by:

- absence of low cost, pervasive access to high speed broadband communications
- limited existence of a respected relationship between universities and industry
- poor access to venture capital to commercialise innovation
- poor availability of purpose constructed secure premises for research and defence purposes
- low regard and low remuneration for academic and research activity
- short term grant funding agreements
- lack of sustained state and federal government support for the innovation process including incubator support, patent advice and product development, technology diffusion and commercialisation
- the Australian Diaspora reflecting the attractiveness of the rest of the world to our brightest and most accomplished talent
- limited philanthropy and endowment for research and entrepreneurship
- the limited size of our national market
- underinvestment in training scientists and engineers
- limited profiling of innovation successes and the researchers that achieve those successes
- the lack of an agreed approach to innovation by industry, academia and the three spheres of government

Leading academics are rarely on industry boards in contrast to the approach taken in countries such as the United States. There needs to be a closer relationship between industry and our universities to promote innovation and entrepreneurship.

Stanford University, located in the Silicon Valley, states that the synthesis of teaching and research is fundamental to the operation of the university. University – industry partnerships and the promotion of entrepreneurship have resulted in the formation of over 3,000 businesses including Cisco, Yahoo, Google, Hewlett Packard, Silicon Graphics and Sun Microsystems. Individual leadership by the Stanford University Provost from 1955 to 1965, Frederick Terman, combined with investment in defence research by the US Government created the Silicon Valley phenomenon.

The current scale of the university is reflected in the Stanford Challenge which is seeking to raise \$4.3 billion over 5 years through donations. The 2007/08 budget for research at Stanford is \$1 billion of which over 80% comes from the US Government.

One of the world's strongest industry clusters, the oil and gas cluster in Houston, gains a significant part of its competitive advantage from the close relationship between industry and the University of Texas. The scale of the University of Texas, which received \$761 million in gifts in 2007 and which will spend \$2.3 billion on research as part of a 2008 budget of \$10.7 billion, dwarfs Australian Universities. By comparison, the University of Western Australia spends \$236 million a year on research and received \$11.4 million in donations and bequests in a 2007 budget of \$594 million.

Many universities have service industry clusters and industry research facilities linked to the main campus. Heriot-Watt University in Edinburgh describes itself as being a research led university which thrives on partnership and pooling. It has very strong links to business and industry. In the 1960's Heriot Watt University moved from its CBD location to a 166 acre greenbelt site to allow it to develop partnerships with industry. All of the collocated industries have a business link to the university and are regarded as an integral part of the university community.

The South West Corridor, with a \$20 billion GRP, contains many innovative emerging companies in the areas of defence services, communications, oil and gas sub sea technology, process control, inspection and testing services, shipbuilding and the resources sector. There needs to be a regionally based hub to service the cutting edge companies amongst the 26,000 businesses in this region, to link to the three universities operating within the region and to help drive growth and innovation in this developing cluster.

The development of the \$1.6 billion, 643 bed, Fiona Stanley Hospital at Murdoch provides an opportunity to cluster health research and support services at the adjacent Murdoch University.

The Defence Materiel Organisation spends around \$9 billion a year in sustaining and equipping our defence forces but much of the high tech equipment is sourced overseas. The expenditure on research and development in the defence sector is less than 5 per cent of Australia's GDP. There needs to be a structured assessment of how Defence expenditure can support innovation.

At any one time over 1 million Australians are overseas travelling, studying and working. This group is critical to Australia's future success as many have been exposed to global supply chains and different innovation systems. Many return with a sense of self confidence and enhanced capacity. Any innovation system has to work out how to attract this group to return to Australia and provide an environment for them to flourish.

Programs encouraging distinguished international researchers to Australian Universities should continue. There should also be support for placements of Australian academics and researchers in world class clusters and structured tours to industries and universities to these clusters.

Innovative individuals and firms should be supported to secure overseas markets to overcome the limitations of the scale of our domestic market. The Federal Government has run successful networking programs in the past to link innovative firms with service companies that have promoted niche opportunities in overseas trade.

The number of engineers and scientists being trained by our universities has plateaued at a time of dramatically increasing demand. The numbers of engineering and science places at universities have to be increased and positive discrimination made for students such as reducing the HECS burden on engineering and science students.

Science and Mathematics must be made more interesting and relevant at secondary school level. The WA Defence Industry Skills Unit are promoting a project "Ingenious" which is an integrated Professional Development Program and Curriculum Development approach providing Interactive Teaching Support Materials to make science exciting and providing instantaneous feedback using advanced software.

Companies should be able to gift their time as a taxable deduction to provide visiting lecturers at tertiary institutions in the same way that art is donated.

Institutions such as the Minerals and Energy Research Institute of Western Australia which have a long history of brokering public research through partnerships between industry and universities should also be supported by five year funding agreements.

The long lead times in research, the value of partnerships with industry and the need for continued funding over an extended period must be recognised in designing funding programs.

The Federal Government has funded initiatives to help develop venture capital markets in the past and should continue to develop and promote a pervasive venture capital market across Australia.

The roll out of the Fibre to the Node Project should give priority to servicing innovative industrial facilities such as the Australian Marine Complex in Cockburn, the Australian Centre for Energy and Process Technology and the Kwinana Industrial Area. There needs to be a forum in which industry and the three spheres of government can develop a strategic approach to establishing an optic fibre network which will meet the demands of industry, researchers, universities and traffic telematics.

Taxation incentives should continue to support innovative research and development. Taxation incentives have helped and should help drive projects such as Hi-Smelt and Hydrogen Energy which have the ability not only to develop new technology but also to develop advanced skills. Hydrogen Energy, a collaboration between BP and Rio Tinto, is undertaking a feasibility study into locating the world's first industrial scale hydrogen power plant integrated with carbon capture and storage at Kwinana.

Australia is around fifteenth in the world in the level of investment in research and development and there need to be strong incentives and simple compliance mechanisms to promote greater industry investment. Australia should seek to be in the top ten countries in the ratio of GERD to GDP.

A major concern about the current approach to innovation is that it appears fragmented, does not promote entrepreneurship, does not encourage technology diffusion, does not engage with the community and lacks clear objectives. The selection and funding of research projects does not appear to be within a strategic framework. We need to have the three spheres of government, industry and academia agree goals and develop a model matched to our future Australian economy and able to be accepted by our community. Even simple agreements could be reached such as all state governments to reimburse university payroll tax and for part of the governments' royalty streams to be hypothecated to universities. This long term commitment of income could support research on economic drivers for the "beyond the boom" economy and to support skills development in areas of critical shortage for the economy. Government purchasing should be used to promote technology commercialisation and diffusion as part of this Australian Innovation Model.



A Co-operative venture of the municipalities of:  
Cockburn, East Fremantle, Fremantle, Kwinana, Melville & Rockingham

Date: April 30, 2008  
Contact: Chris Fitzhardinge (08) 9364 0631  
Reference: SWG Review of Innovation April 2008

Dr Terry Cutler  
Chairman  
Review of the National innovation System  
GPO Box 9839  
CANBERRA ACT 2601

Dear Terry,

## **REVIEW OF AUSTRALIA'S NATIONAL INNOVATION SYSTEM**

Thank you for the opportunity to comment on Australia's National Innovation System.

The South West Group believes strongly that governments must facilitate a National Innovation Strategy, partner with industry and build a robust relationship between industry and universities.

In the attached submission the South West Group recommends:

- A closer relationship between universities and industry to promote innovation and entrepreneurship
- Regionally based innovation hubs
- Assessment of how Defence expenditure can promote innovation
- Initiatives to encourage Australians studying or working overseas to bring their skills and resources back to Australia
- Supporting distinguished researchers to locate to Australia
- Supporting networking for innovative firms to encourage export
- Increasing university places for engineers and scientists
- Supporting initiatives to make science and mathematics more attractive for secondary school students
- Establishing a protocol where companies can gift the time of staff as visiting lecturers to support tertiary education
- Promoting public research through organisations such as MERIWA

- Active support by the Federal Government to improve access to venture capital
- Establishing regional forums to allow input into planning optic fibre networks
- Continuing taxation incentives for industry research
- Setting a medium term target of being in the top ten countries for GERD to GDP
- Establishing an Australian model of Innovation underpinned by long term funding commitments
- Using government purchasing to support innovations and technology diffusion

Australia faces many challenges in maintaining a strong, diverse economy. Having a purposeful, well supported innovation system, closely linked to industry and pursuing broadly agreed priorities is essential.

Yours sincerely

**CHRIS FITZHARDINGE**  
**DIRECTOR**  
**SOUTH WEST GROUP**



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The South West Group will be persuasive, forward looking and influential in representing, supporting and promoting Local Government interests that affect the growth and sustainable development of South Metropolitan Perth.

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## SOUTH METROPOLITAN REGION

## KEY INFORMATION

Area	619.4 square kilometres (approximately 50 km long by an average 12km width)
Location	South Western Quarter of Metropolitan Perth bounded by the Canning River, Swan River, Fremantle Harbour, Cockburn Sound, Warnbro Sound and generally 2 km east of the Kwinana Freeway alignment.
Economic Infrastructure	Fremantle Port, Australian Marine Complex, Kwinana Industrial Area, HMAS Stirling, Jandakot Airport
Current Population 2006	331,301 (ABS 2008)
Projected Population 2021	421,500 (WAPC 2005)
Working Age Population	223,600 (ABS Aged 15-64 Jan 2008)
Employment Rate	75.7% (ABS Jan 2008)
Labour Force	178,283 (Workplace Portal December 2007)
Unemployment Rate	3.3% (Workplace Portal December 2007)
Indigenous Population	1.4% (Census 2006)
Overseas Born Population	31.5% (Census 2006)
Mean Taxable Income	\$7,525.43 million (ATO 2005/6)
Building Approvals	\$1,148million (ABS 2005/06)

