

2012-2013

TIAC Annual Activity Report



TIAC

Technology and Industry Advisory Council

Hon Michael Mischin MLC
Minister for Commerce
Level 10
Dumas House
2 Havelock Street
WEST PERTH WA 6005

Dear Minister

On behalf of the Western Australian Technology and Industry Advisory Council (TIAC), I am pleased to submit the TIAC Annual Activity Report for the year ending 30 June 2013, for your information and subsequent presentation to Parliament in accordance with Section 26(1) and Section 26(2) of the *Industry and Technology Development Act 1998* (ITD Act).

TIAC has also reported through the Department of Commerce Annual Report and Financial Statement in accordance with Section 26(3) of the ITD Act in compliance with Section 62 of the *Financial Administration and Audit Act 1985*.

Yours sincerely



Mr Alan Bansemer
Chair

31 August 2013

On behalf of Council members:

Current members (as of 30 June 2013):

Mr Alan Bansemer (Chair)	Dr Jim Ross AM
Professor Lyn Beazley AO	Mr Andy Farrant
Professor Shaun Collin	Mr Brian Bradley (ex officio)
Professor Barry Marshall AC	

Mr Colin Beckett (resigned 30 June 2013)

Contents

Introduction	4
TIAC membership.....	4
Resignations and appointments	5
Objects of the <i>Industry and Technology Development Act 1998</i>.....	5
Functions of the Western Australian Technology and Industry Advisory Council	5
Ministerial directions	6
TIAC activities in 2012–2013.....	7
Charter.....	7
Advice on the current <i>Industry Technology and Development Act 1998</i>	7
Research Report: Productive Partnerships: Advancing Science, Technology, Engineering and Mathematics Education in Western Australian Schools....	7
Research project: Opportunities for Small to Medium Enterprises in the Resource Sector.....	7
Research Project: Creating an Environment for Innovation	8
Engagement with industry and academic institutions	9
Engagement with the Innovation Centre of Western Australia.....	9
TIAC’s work plan: The Way Ahead	10
Implementation of the work plan - The Way Ahead.....	11
Research project: Optimisation of STEM Support in Western Australian Schools.....	11
Research project: Innovation in the regions.....	12
Research project: Feasibility Study into the Establishment of Research Facilities in the Kimberley Region of Western Australia.....	13
Formalising the Economic Growth through Innovation Committee	14
Establishment of a panel arrangement for TIAC	14
Financial provisions.....	15
Remuneration	15
Remuneration of Council members	15
Remuneration of Science Education Committee members.....	15
Research Investment and Advisory Services Branch.....	16
Financial statement.....	16
Outlook for 2013–2014	17

Research project: Establishing a Baseline of the Research and Innovation Capability and Capacity in Western Australia	17
Research project: Driving Economic Growth through Innovation.....	17
Report launch: Enhancing Opportunities for Small to Medium Enterprises in the Resources Sector in Western Australia.	18
Future engagement activities.....	18
Appendices	19
Appendix 1 - TIAC Charter.....	
Appendix 2 - The Way Ahead – A work plan for TIAC	
Appendix 3 - Economic Growth through Innovation Committee – Terms of reference.....	

Introduction

The Western Australian Technology and Industry Advisory Council (TIAC), provides independent advice to the State Government on any matter relating to the Objects of the *Industry and Technology Development Act 1998* (ITD Act). TIAC is uniquely positioned to provide strategic, evidence-based advice identifying and encouraging innovation in industry, science and technology to drive economic growth and diversity in Western Australia

TIAC is preserved and continued in existence by the ITD Act and is the key independent advisory body reporting directly to the Minister responsible for the ITD Act.

The members of TIAC are appointed by the Minister and endorsed by the State Cabinet. Members are selected on merit to provide advice to the Government on the strategic direction for industry, science and technology in Western Australia.

TIAC, under the ITD Act, may independently publish any report that it prepares.

TIAC reports through the Minister to Parliament under Section 26(1) and Section 26(2) of the ITD Act. TIAC reports under the *Financial Administration and Audit Act 1985* through the Department of Commerce under Section 26(3) of the ITD Act.

TIAC membership

The members of TIAC during the 2012–2013 financial year were:

Mr Alan Bansemer (Chair)

TIAC Chair
Director
Banscott Health Consulting Pty Ltd

Mr Colin Beckett (6 December 2010 to 30 June 2013)

General Manager of the Greater Gorgon Area
Chevron Australia Pty Ltd

Mr Andy Farrant

Principal
One Degree Advisory

Professor Lyn Beazley AO

Chief Scientist of Western Australia

Professor Shaun Collin

Western Australian Research Fellow
The University of Western Australia

Mr Brian Bradley (ex officio)

Director General
Department of Commerce

Professor Barry Marshall AC

Nobel Laureate
The University of Western Australia

Dr Jim Ross AM

Chairman
Earth Science Western Australia

Resignations and appointments

On 30 June 2013, Mr Colin Beckett resigned from his position as a member of TIAC.

On 30 June 2013, the appointment terms of Mr Alan Bansemer (Chair), Professor Lyn Beazley AO and Professor Shaun Collin expired. Under Section 1 of Schedule 1 of the ITD Act, an appointed member whose term of office expires by the passage of time continues in office until he or she is re-appointed or his or her successor comes into office.

There were no new appointments to TIAC during the reporting period.

Objects of the *Industry and Technology Development Act 1998*

The objects of the ITD Act (Section 3) are to:

1. promote and foster the growth and development of industry, trade, science, technology and research in the State;
2. improve the efficiency of State industry and its ability to compete internationally;
3. encourage the establishment of new industry in the State;
4. encourage the broadening of the industrial base of the State; and
5. promote an environment which supports the development of industry, science and technology and the emergence of internationally competitive industries in the State.

Functions of the Western Australian Technology and Industry Advisory Council

- 1) The Council, under Section 21 of the ITD Act, is required to:
 - a) provide advice to the Minister, at the initiative of the Council or at the request of the Minister, on any matter relating to the objects of the *Industry and Technology Development Act 1998*; and
 - b) carry out, collaborate in or procure research, studies or investigations on any matter relating to the objects of the Act, including matters relating to the:
 - i) role of industry, science and technology in the policies of government;
 - ii) social and economic impact of industrial and technological change;
 - iii) employment and training needs and opportunities relating to industrial, scientific and technological activities in the State;
 - iv) adequacy of, priorities among and co-ordination of, scientific, industrial and technological activities in the State;
 - v) methods of stimulating desirable industrial and technological advances in the State;

- vi) application of industrial, scientific and technological advances to the services of the Government; and
 - vii) promotion of public awareness and understanding of development in industry, science and technology.
- 2) The Council may publish and make available any report or finding produced as a result of any research, study or investigation under subsection (1).
 - 3) The Council is to liaise with and advise any person, body or organisation with respect to the conduct of any research, study or investigation into a matter relating to industry, science and technology in the State.
 - 4) In carrying out its functions the Council is to:
 - a) have regard to the needs of the Western Australian community and the resources of the State;
 - b) promote developments in industry, science and technology that increase productivity and competitiveness; and
 - c) support developments that create employment opportunities.
 - 5) The Council has the power to do all things necessary or convenient to be done for or in connection with the performance of its functions.

Ministerial directions

Under Section 25 of the ITD Act, the responsible Minister may give directions in writing to the Council with respect to the performance of its functions or the exercise of its powers.

During the period of 1 July 2012 to 20 March 2013, the responsible Minister for TIAC was the Hon John Day MLA, former Minister for Science and Innovation.

During the period from 21 March 2013 to 30 June 2013, the responsible Minister for TIAC was the Hon Colin Barnett MLA, Premier; Minister for Science.

During this financial year, the TIAC Chair did not receive any formal directions in writing from the former Minister for Science and Innovation or the current Minister for Science.

The State Solicitor's Office have indicated that in accordance with Section 26 of the ITD Act, a direction from the Minister can be taken as relevant in the financial year during which it must be reported in the annual report of the Council.

For this reason, TIAC understands that there are no ministerial directions on which to report for this financial year.

TIAC activities in 2012–2013

Charter

At its fourteenth meeting in February 2013, TIAC approved the annual revision of its Charter (Appendix 1).

Advice on the current Industry Technology and Development Act 1998

In August 2012, at the request of the former Minister for Science and Innovation, TIAC provided advice regarding the review of the current *Industry and Technology Development Act 1998* (ITD Act). The advice submitted outlined details of TIACs suggested changes to the legislation that underpin the functions of the Council.

In August 2012, TIAC received acknowledgement of its advice. TIAC were informed that its advice would be forwarded to the review of the ITD Act, as per Section 32 of the ITD Act.

Research Report: Productive Partnerships: Advancing Science, Technology, Engineering and Mathematics Education in Western Australian Schools

This preliminary study was overseen by the TIAC Science Education Committee. The project report was made available on the TIAC website in July 2012.

The former Minister for Science and Innovation provided a copy of the report to the Hon Elizabeth Constable MLA, former Minister for Education, for her consideration. TIAC received a formal response from the former Minister for Education in July 2012, thanking TIAC for the report and indicating support for the development of partnerships with external providers of science, technology, engineering and mathematics (STEM) education.

In July 2012, TIAC met with Ms Sharyn O'Neill, Director General of the Department of Education to discuss the above report and TIAC's intended further study in the area of STEM education. TIAC received a formal response from the Director General of the Department of Education in September 2012, indicating support for the work undertaken by TIAC and for maintaining the involvement of the department regarding TIAC's intended further study in the area of STEM education.

Research project: Opportunities for Small to Medium Enterprises in the Resource Sector.

TIAC has completed a research project and produced a report detailing 12 recommendations for new State Government strategies to enable small to medium enterprises (SMEs) to capture the benefits of Western Australia's mining and petroleum sector.

The report, *Enhancing Opportunities for Small to Medium Enterprises in the Resource Sector in Western Australia* details strategies to enable SMEs to provide

a competitive level of goods and services to the mining and energy sectors, and develop products to increase the level of innovation in those industries.

The members of the project steering group were:

Mr Colin Beckett (Chair)
(resigned June 2013)
TIAC member

Mr Andrew Griggs
Department of Commerce

Ms Nicole Roocke
Chamber of Minerals and Energy

Mr Stephen Grocott
Department of Commerce

Mr Mark South
Small Business Development Centre

The report was endorsed by TIAC at its fifteenth meeting in April 2013 and provided to the Minister for Science in April 2013.

As the report provided recommendations involving strategies across a number of portfolios TIAC requested that the Minister for Science forward the report to the Hon Bill Marmion MLA, Minister for Mines and Petroleum; the Hon Michael Mischin MLC, Minister for Commerce; and the Hon John Day MLA, Minister for Planning for their consideration.

A copy of the report will also be made available on the TIAC website in August 2013.

Research Project: Creating an Environment for Innovation

In 2012, TIAC commissioned a review that aimed to gather evidence to assist in building a comprehensive rationale demonstrating the benefits of creating an environment that encourages innovative approaches to developments and investments in science and technology.

The research project undertaken by Dr Doug McGhie and Dr David Morrison of Science Matters explored innovation success stories in other states and countries and examined the “conditions for success” in those jurisdictions.

The resulting report was presented to TIAC at its twelfth meeting in October 2012. Feedback from stakeholders indicated that the report required additional detail to establish a robust and credible argument supporting the value of investing in science and technology for sustainable economic growth. Thus, TIAC determined not to release the report to the public.

Engagement with industry and academic institutions

At TIAC's fourteenth meeting in February 2013, TIAC agreed to investigate opportunities for future meetings to be held at academic and industry sites. During the 2012–2013 financial year, two Council meetings were conducted at the premises of its constituents.

TIAC's fifteenth meeting in April 2013, was held at Edith Cowan University. TIAC members toured the Security Research Institute and the Electron Science Research Institute. TIAC's visit provided an acknowledgement of the national importance of Cyber security in the 21st Century and its significance in protecting future Western Australian industrial, economic and social infrastructure.

TIAC's sixteenth meeting in June 2013, was held at Matrix Composite and Engineering, a Western Australian company, that designs, tests and manufactures technically advanced products for the oil, gas and minerals industries. The visit highlighted the challenges globally competitive Western Australian manufacturers face to remain competitive through continuous investment into innovation.

TIAC has benefited from receiving feedback on the challenges industry faces in research, innovation, science and industry in Western Australia. TIAC's engagement with its constituents provides the Minister with informed fact-based independent advice. The feedback from these meetings is also being considered in future TIAC activities.

Engagement with the Innovation Centre of Western Australia

In April 2013, TIAC met with the Innovation Centre of Western Australia (ICWA) executive to pursue future collaborations and engagement with the ICWA, and learn more about how the TIAC can support ICWA's activities.

TIAC believes that a greater emphasis should be placed on developing strategies to encourage industry and State Government engagement with innovators. TIAC has extended an invitation for the ICWA to present at a future Council meeting to discuss some of these challenges in the innovation space. Many of the outcomes and strategies will potentially contribute to the future work of TIAC.

Members Participation at Innovators Forum

In February 2013, the ICWA in collaboration with the Department of Commerce, held a forum to discuss the challenges of bringing a new product(s) or service(s) to commercial reality.

TIAC members were invited to participate in the forum to meet past Innovator of the Year finalists and the Alumni from Curtin's Ignition Program to hear their experiences and insights.

TIAC members in attendance were Mr Andy Farrant, Mr Colin Beckett, Professor Barry Marshall, Professor Lyn Beazley, Professor Shaun Collin and Mr Brian Bradley.

The event highlighted and prompted constructive discussions to:

- develop strategies that support greater business and State Government engagement with innovators;
- improve the focus of support programs; and
- understand the mechanisms that prepare innovators to be investor ready

The discussion provided a forum to exchange ideas and advice on assisting innovators to commercialise opportunities for the benefits of Western Australia. TIAC participation in the forum provided valuable expert advice and feedback.

TIAC's work plan: The Way Ahead

In October 2012, TIAC held a full day workshop and undertook a consultative planning process with key stakeholders to consider the priority areas of importance to the State's future economic prosperity. TIAC agreed that these areas would guide TIAC's activities for the next two to four years.

The resulting work plan *The Way Ahead* was submitted to the former Minister for Science and Innovation in November 2012 (Appendix 2).

The work plan reflects TIAC's recognition of the importance of industry, scientific and technological developments as key drivers of Western Australia's long term prosperity and economic development.

TIAC's thirteenth meeting in December 2012, was attended by the Hon John Day MLA, former Minister for Science and Innovation. The Minister acknowledged the contributions of all the members and indicated his support for the work plan *The Way Ahead* to be implemented and publically released.

TIAC publically released *The Way Ahead* on the TIAC website and circulated the work plan to key stakeholders involved in the consultation phase in December 2012. A media release from TIAC was also released in December 2012. The media release, available on the TIAC website, indicates the former Minister for Science and Innovation's endorsement of the direction being taken by TIAC.

Implementation of the work plan - The Way Ahead

During the 2012–2013 financial year, TIAC progressed a number of activities and research projects, including consultation with key stakeholders to implement its work plan *The Way Ahead*.

Research project: Optimisation of STEM Support in Western Australian Schools

TIAC recognises that the State's capacity to achieve excellence in science and innovation depends heavily on the outcomes from education in science, technology, engineering and mathematics (STEM). The preliminary study previously undertaken by the Science Education Committee (SEC) indicated that enhancing STEM education in Western Australia requires a collaborative effort between academia, industry, government and the end-users.

To build on this previous work, at TIAC's twelfth meeting in October 2012, TIAC approved the commencement of the research project *Optimisation of STEM support in Western Australian Schools*.

The project will provide increased understanding of STEM education needs and identify opportunities and mechanisms to enhance and optimise formal and external STEM education support. The research will assist TIAC in developing recommendations for the State Government for strategies to strengthen STEM education in schools.

The research project is being overseen by the SEC and being undertaken by Professor Mark Hackling and his team at Edith Cowan University.

The members of the Science Education Committee are:

Dr Jim Ross (Chair)

TIAC Member

Mr Alan Brien

Scitech

Mr Russell Dwyer

School Curriculum Standards Authority

Ms Glenda Leslie

Association for Independent Schools in Western Australia

Mr John Clarke

Science Teachers Association of Western Australia

Ms Louise Nielsen

(resigned August 2012)
Department of Education

Dr Pamela Garnett

Formally St Hilda's Anglican School for Girls

Mr David Wood

Catholic Education Office of Western Australia

As at 30 June 2013, the literature review and consultations with the formal STEM education systems are nearing completion. Consultation with current and potential external providers is set to commence in August 2013. It is anticipated that the report will be finalised in November 2013.

Science Education Committee breakfast event

In June 2013, TIAC held a breakfast event supporting the consultation phase of the project. The breakfast was hosted by Professor Lyn Beazley AO, Chief Scientist of Western Australia and launched by the Hon. Peter Collier MLC, Minister for Education. Approximately 90 representatives across industry, academia, education and government attended the event.

Dr Jim Ross, Chair of the Science Education Committee, provided an overview of the project and set the context for the research in terms of the declining participation of Western Australian students in science and mathematics. Prof Mark Hackling provided an update on the project progress, including the results of a recent literature review and a number of consultations with the formal education sector. An interactive session enabled audience members to provide feedback regarding their STEM educational needs and this was followed by a question and answer session with Dr Ross and Prof Hackling.

Research project: Innovation in the regions

TIAC recognises innovation is a key driver of economic development. TIAC has commissioned a research project that aims to provide examples of successful innovation in regional areas of Western Australia and identify the factors that influence the success of regional innovation in the State. This will support TIAC in formulating recommendations to the State Government on ways to stimulate innovation in regional Western Australia.

The research project is being overseen by a TIAC steering group and is being undertaken by Dr Richard Ball of Keston Technologies.

The members of the project steering group are:

Mr Brian Bradley (Chair)

TIAC ex officio

Mr Mark South

Small Business Development Centre

Mr Ian Fletcher

(resigned April 2013)

Regional Development Council

Dr Claire Patterson

Department of Commerce

Consultation with the Western Australian Regional Development Trust

In November 2012, TIAC met with representatives from the Department of Regional Development and Lands and the Regional Development Trust to discuss the research project and shared interests in the area of regional innovation.

Ms Sue Middleton, Deputy Chair of the Regional Development Trust, attended TIAC's fourteenth meeting in February 2013 and provided an overview of the Trust's activities.

The Trust has reviewed a copy of the draft report and provided TIAC with feedback. As at 30 June 2013, the consultant is incorporating feedback received from TIAC into the final report. It is anticipated that the report will be finalised in August 2013.

Research project: Feasibility Study into the Establishment of Research Facilities in the Kimberley Region of Western Australia

TIAC agrees there is merit in exploring whether the Kimberley would benefit from the establishment of new research facilities in the region, and if so, what form any new facilities would take.

At TIAC's eleventh meeting in August 2012, TIAC approved the progression of a feasibility study into the facilities required to build the capacity for collaborative, multi-disciplinary research, focused on tropical science in the Kimberley region of Western Australia. The current research project is not limited to purpose built infrastructure and examines the means to build collaboration through existing facilities including methodologies for data integration.

The research project is being overseen by a TIAC steering group and is being undertaken by Peter Davies and a team at the University of Western Australia.

The members of the project steering group are:

Professor Lyn Beazley
TIAC member and Chief Scientist

Dr Penny Atkins
Office of the Chief Scientist

Professor Shaun Collin
TIAC member

Mr Phillip Murray
Department of Commerce

As of 30 June 2013, the consultant has completed the review of the relevant literature and stakeholder consultation activities. The consultant is currently incorporating feedback received from TIAC into the final report. It is anticipated that the report will be finalised in August 2013.

Travel to the Kimberley region of Western Australia.

In April 2013, TIAC members Professor Lyn Beazley and Professor Shaun Collin travelled to the Kimberley in support of the consultation phase of the research project.

The key issues highlighted by the visit included:

- The importance of thorough stakeholder engagement.
- The appreciation of the cultural relevance of the area.
- The process of identifying suitable volunteers to work in the Kimberley.
- The need for more residential accommodation in the area.
- The need to consider a multidisciplinary and collaborative approach between universities, industries and government to solve infrastructure issues.

Formalising the Economic Growth through Innovation Committee

At TIAC's fourteenth meeting in February 2013, TIAC agreed to establish the Economic Growth through Innovation Committee, as a formal committee of TIAC in order to progress the activities under the first initiative of the work plan.

The formal Committee has held meetings on 28 March 2013 and 30 May 2013. The Committee's Terms of Reference and membership were finalised and approved by TIAC in April 2013 (Appendix 3).

The members of the Economic Growth through Innovation Committee are:

Mr Andy Farrant (Chair)
TIAC member

Dr David Pannell
University of Western Australia

Mr Colin Beckett
(resigned June 2013)
TIAC member

Dr Robyn Owens
University of Western Australia

Dr Jim Ross
TIAC member

Dr Peter Lilley
BHP Billiton

Mr Chris Hill
Department of Commerce

Establishment of a panel arrangement for TIAC

At TIAC's thirteenth meeting in December 2012, TIAC agreed to establish a panel of consultants with experience across industry, economic development, science, technology and innovation to implement the activities in the work plan and ensure quality in contracting.

The Department of Commerce is assisting TIAC in the process of establishing a panel of contractors. A request for tender was advertised in April 2013. As of the 30 June 2013 the tender evaluation process is still underway.

Financial provisions

TIAC expenses are provided for under Section 15 of the ITD Act via the Western Australian Industry and Technology Development Account.

TIAC was allocated a total budget for the 2012–2013 financial year of \$551,000.

Remuneration

Remuneration of Council members

Council members' remuneration was recommended by the Public Sector Commissioner under provisions of Section 24 of the ITD Act as follows:

- | | |
|---|----------------------|
| (a) Chairperson's Salary: | \$40,000 (per annum) |
| (b) Member's Sitting Fee – Non-Public Sector: | \$660 (per meeting) |
| (c) Member's Sitting Fee – Public Sector: | Nil |

The recommendation was made pursuant to Premier's Circular 2010/02 – "State Government Boards and Committees" which excludes those on the public payroll from receiving fees.

TIAC met on six occasions between July 2012 and June 2013: on 14 August 2012, 2 October 2012, 11 December 2012, 5 February 2013, 9 April 2013 and 4 June 2013.

Remuneration of Science Education Committee members

Science Education Committee members' remuneration was recommended by the Public Sector Commissioner under provisions of Section 24 of the ITD Act. The recommendation was approved by the former Minister for Science and Innovation in July 2012.

- (a) Chairman - \$830 per day for meetings of 4 hours or more or \$540 per day for meetings less than 4 hours; and
- (b) Members - \$540 per day for meetings of 4 hours or more or \$350 per day for meetings less than 4 hours.

The recommendation was made pursuant to Premier's Circular 2010/02 – "State Government Boards and Committees" which excludes those on the public payroll from receiving fees.

The Science Education Committee met on two occasions between July 2012 and June 2013: on 6 February 2013 and 22 April 2013.

Research Investment and Advisory Services Branch

As per the Operating Protocol between the Department of Commerce and TIAC, the department makes a team of staff (known as the Research Investment and Advisory Services (RIAS) Branch) available to TIAC, who provide direct advice and the following support to TIAC:

- secretariat support:
 - minutes
 - agenda
 - conflict of interest registry
 - booking conference and event attendance;
- project management support;
- budget and financial administration; and
- direct advice.

The General Manager of the RIAS Branch is the main point of contact for TIAC, and liaises with the RIAS Branch and TIAC to ensure continuity of information and advice (as per the Operating Protocol).

The General Manager of the RIAS Branch and the TIAC Executive Officer also attend TIAC meetings as observers.

Financial statement

TIAC reports under the *Financial Administration and Audit Act 1985* through the Department of Commerce Annual Report and Financial Statements.

Outlook for 2013–2014

TIAC's work plan *The Way Ahead*, underpins TIAC's focus moving forward. Future initiatives include:

- demonstrating the economic benefits of science, research and technology;
- examining innovative approaches to a range of opportunities and challenges facing Western Australia; and
- investigating the State's changing economy to identify new technologies and emerging industries.

Research project: Establishing a Baseline of the Research and Innovation Capability and Capacity in Western Australia

There is currently no single holistic view of the research, innovation and intellectual property (IP) landscape in Western Australia.

TIAC has agreed to undertake a project to capture a complete picture of the State's capacity and capabilities that will provide a practical and factual "baseline" to inform State Government decisions.

The project will be overseen by a TIAC steering group, chaired by the TIAC Chair, Mr Alan Bansemer.

As of 30 June 2013, the steering group has developed a proposed terms of reference for the study and TIAC have approved the progression of the project. It is anticipated that the report will be finalised in late 2013.

Research project: Driving Economic Growth through Innovation

Western Australia's economy is heavily dependent on its traditional strengths of mining, energy production and agriculture and will remain so for the foreseeable future. There is an opportunity to sustain and broaden the economic benefits of Western Australia's traditional industries whilst developing existing and emerging Western Australian capabilities to sustain the State beyond the current resource activity.

TIAC has agreed to undertake a research project that will collect evidence demonstrating the impact science, technology, innovation and research play in diversifying and broadening economic development. This evidence will form the basis of a compelling business case for the State Government to directly invest in and develop policies to support the growth of innovation, science and technology in Western Australia.

The project will be overseen by the Economic Growth through Innovation Committee, chaired by Mr Andy Farrant. As at 30 June 2012, the Committee has developed a proposed terms of reference for the research project. It is anticipated that the report will be finalised in January 2014.

Report launch: Enhancing Opportunities for Small to Medium Enterprises in the Resources Sector in Western Australia.

TIAC believes that the need for improved understanding and communication between small to medium enterprises and large resource project proponents is a significant issue.

TIAC intends to organise an event to launch the report *Enhancing Opportunities for Small to Medium Enterprises in the Resources Sector in Western Australia*, to key stakeholders. The event will provide an opportunity for interaction between TIAC and a range of key representatives, including key government, industry and community stakeholders.

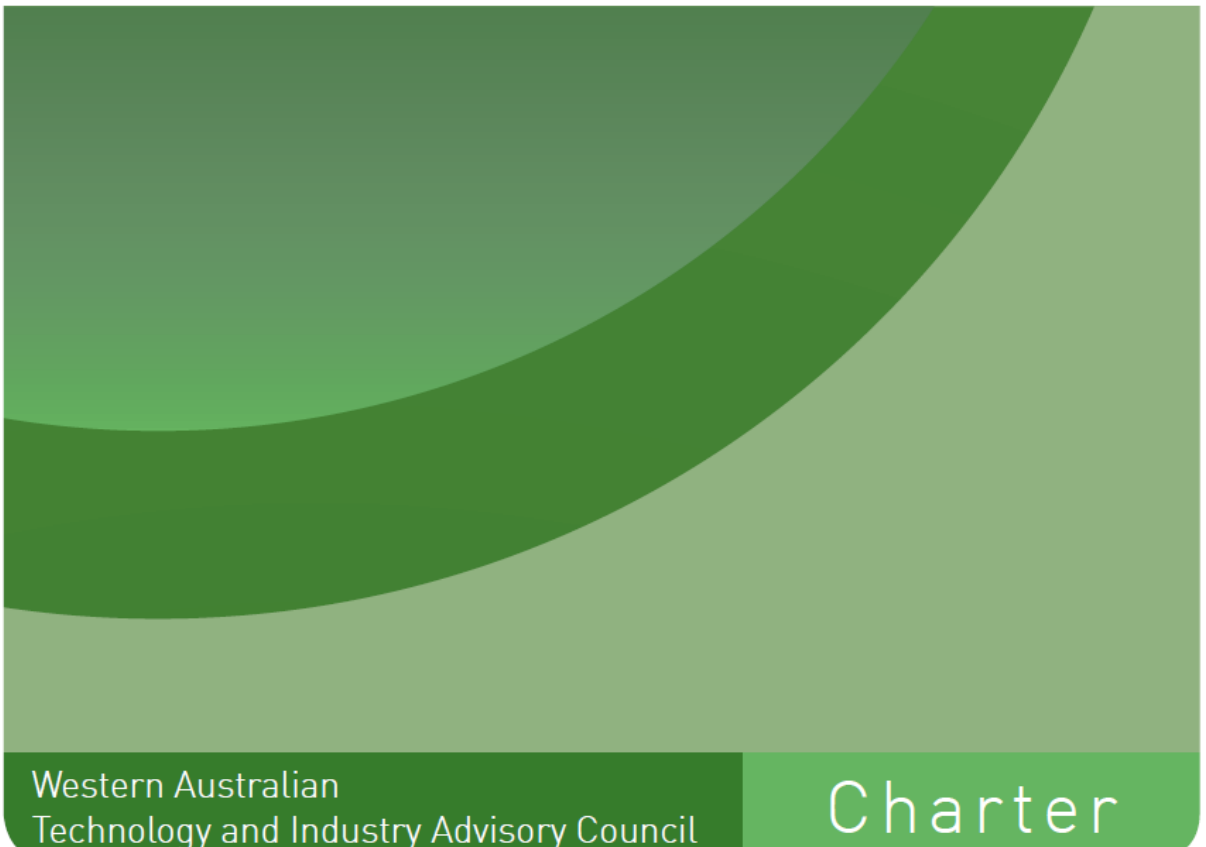
As of 30 June, TIAC has liaised with the Chamber of Minerals and Energy to develop a joint event proposal to launch the report to key stakeholders. It is anticipated that the event will be held late in 2013.

Future engagement activities

In order to facilitate and provide the responsible Minister with informed fact-based independent advice, TIAC also intends to meet with ALCOA and the University of Notre Dame in the remainder of 2013. In 2014, TIAC intends to investigate further opportunities for future meetings to be held at academic and industry sites.

Appendices

Appendix 1 - TIAC Charter



Western Australian
Technology and Industry Advisory Council

Charter

WESTERN AUSTRALIAN TECHNOLOGY AND INDUSTRY ADVISORY COUNCIL CHARTER

Introduction

The Technology and Industry Advisory Council (Council) is established under the *Industry and Technology Development Act 1998* (ITD Act).

Objective

The objects of the ITD Act under Section 3 are:

- to promote and foster the growth and development of industry, trade, science, technology and research in the State;
- to improve the efficiency of State industry and its ability to compete internationally;
- to encourage the establishment of new industry in the State;
- to encourage the broadening of the industrial base of the State; and
- to promote an environment which supports the development of industry, science and technology and the emergence of internationally competitive industries in the State.

According to Section 21 of the ITD Act:

1. The Council is to —
 - a. provide advice to the Minister, at the initiative of the Council or at the request of the Minister, on any matter relating to the objects of this Act; and
 - b. carry out, collaborate in or procure research, studies or investigations on any matter relating to the objects of this Act, including matters relating to:
 - i. the role of industry, science and technology in the policies of government;
 - ii. the social and economic impact of industrial and technological change;
 - iii. employment and training needs and opportunities relating to industrial, scientific and technological activities in the State;
 - iv. the adequacy of, priorities among and co-ordination of, scientific, industrial and technological activities in the State;
 - v. methods of stimulating desirable industrial and technological advances in the State;
 - vi. the application of industrial, scientific and technological advances to the services of the Government; and
 - vii. the promotion of public awareness and understanding of development in industry, science and technology.

2. The Council may publish and make available any report or finding produced as a result of any research, study or investigation under subsection (1).
3. The Council is to liaise with and advise any person, body or organization with respect to the conduct of any research, study or investigation into a matter relating to industry, science and technology in the State.
4. In carrying out its functions the Council is to —
 - a. have regard to the needs of the Western Australian community and the resources of the State;
 - b. promote developments in industry, science and technology that increase productivity and competitiveness; and
 - c. support developments that create employment opportunities.
5. The Council has the power to do all things necessary or convenient to be done for or in connection with the performance of its functions.

Reviewing

The Charter and Code of Conduct will be reviewed annually.

Reporting Structure

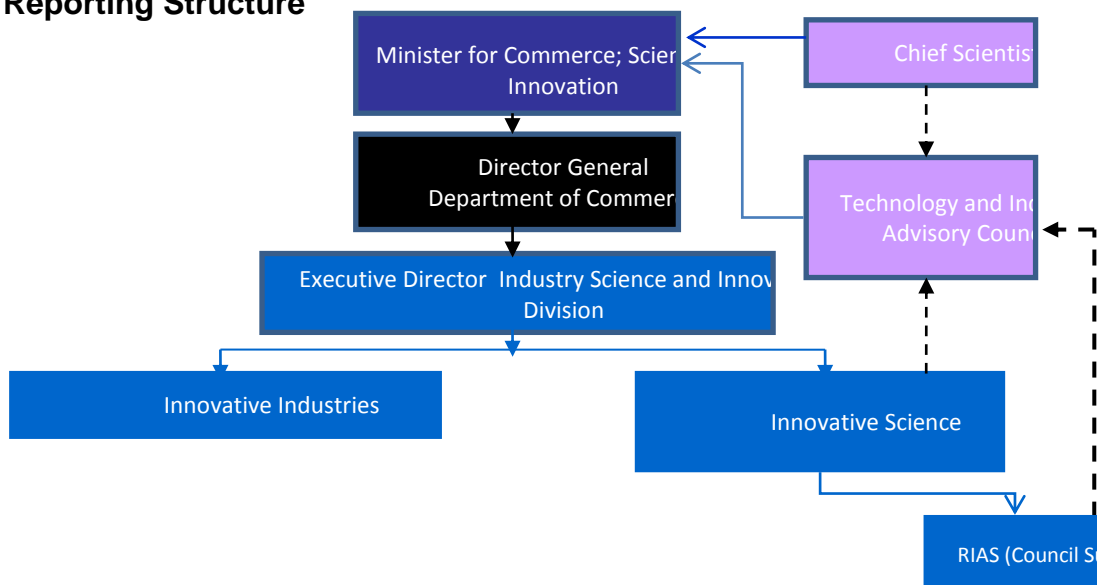


Diagram: Technology and Industry Advisory Council reporting structure in relation to the Department of Commerce.

Structure of the Council

The Council will include members with wide experience in industry and innovation in practice. As per ITD Act 1998, Part 6, Section 22(2).

The Minister is to appoint a chairperson of the Council from among the appointed members of the Council, as per ITD Act 1998, Part 6, Section 22(3).

Members will be appointed for a term as specified in their appointment, not exceeding three years, but may from time to time be re-appointed, as per ITD Act 1998, Schedule 1 Section 23(1).

Resignation, removal, etc.

As per ITD Act 1998 Section 23 Schedule 1 (2.1 and 2.2).

Minister may give directions

The Minister may give directions in writing to the Council with respect to the performance of its functions or the exercise of its powers, either generally or in relation to a particular matter, and the Council is to give effect to any such direction, as per ITD Act 1998, Part 6, Section 25(1).

The text of a direction given under subsection (1) is to be included in the annual report of the Council under Section 26.

Operations

The Council will meet at the times and places that the Council determines at intervals not longer than 2 months.

The General Manager, Research Investment and Advisory Services Branch (RIAS) will be the main point of contact between TIAC and the Department of Commerce. The General Manager will be invited to attend TIAC meetings as an observer.

An Executive Officer, appointed by the Department of Commerce, will coordinate meetings and prepare minutes which will be recorded and stored in accordance with public sector record management standards.

The Chairperson, will submit a copy of the minutes of each meeting to the Minister within 14 days after the meeting at which the minutes were confirmed.

Annual report of the Council

The Council, must, as soon as practicable after 1 July, and in any event on or before 31 August, in each year, prepare and give to the Minister a report on its operations and proceedings for the previous financial year, as per ITD Act 1998, Part 6, Section 26(1).

The Minister is to cause the Council's report to be laid before each House of Parliament within 7 sitting days of the House after the Minister has received it, as per ITD Act 1998, Part 6, Section 26(2).

This section does not affect any duty of the accountable authority of the department under Part 5 of the Financial Management Act 2006 to prepare and submit an annual report containing information about the Council or the operation of that Act in relation to that annual report.

Remuneration or Sitting Fees

Members are remunerated under Section 24 of the ITD Act 1998.

On 24 November 2010, the Public Sector Commissioner provided a determination for remuneration of TIAC members being:

- a. Chairman - \$40,000 per annum; and
- b. Members - \$660 per day for meetings of 4 hours or more or \$430 per day for meetings less than 4 hours.

The recommendation is made pursuant to Premier's Circular 2010/02 – "State Government Boards and Committees" which excludes those on the public payroll from receiving fees.

On June 2012, the Public Sector Commissioner provided a determination for remuneration for Science Education Committee members being:

- a. Chairman - \$830 per day for meetings of 4 hours or more or \$540 per day for meetings less than 4 hours; and
- b. Members - \$540 per day for meetings of 4 hours or more or \$350 per day for meetings less than 4 hours.

The recommendation is made pursuant to Premier's Circular 2010/02 – "State Government Boards and Committees" which excludes those on the public payroll from receiving fees.

Code of Conduct

This Code of Conduct (Code) is based on the Western Australian Public Sector Code of Ethics (Code of Ethics) as issued by the State Government's Public Sector Commissioner. It is applicable to most public sector bodies, including boards, and Councils created for a public purpose under Western Australian legislation.

In this Code, "member" means a Technology and Industry Advisory Council member duly appointed by the Minister under the ITD Act 1998.

Members are expected to:

- Act with care and diligence and make decisions that are honest, fair, impartial, and timely and consider all relevant information.
- Treat people with respect, courtesy and sensitivity and recognise their interests, rights, safety and welfare.
- Use the resources of the state in a responsible and accountable manner that ensures the efficient, effective and appropriate use of human, natural, financial and physical resources, property and information.

Personal behaviour

Members are expected to:

- act ethically and with integrity;

- act according to the legislative requirements, policies and ethical codes that apply;
- make decisions fairly, impartially and promptly, considering all available information, legislation, policies and procedures;
- treat members of the public and colleagues with respect, courtesy, honesty and fairness, and have proper regard for their interests rights, safety and welfare;
- not harass, bully or discriminate against colleagues, members of the public and support staff;
- contribute to a harmonious, safe and productive work environment by their work habits, and professional workplace relationships; and
- serve the government of the day by fulfilling their purpose and statutory requirements.

Communication and official information

Members are expected to:

- not disclose official information or documents acquired through their work, other than as required by law or where proper authorisation is given;
- not misuse official information for personal or commercial gain for themselves or another;
- adhere to legal requirements, policies and all other lawful directives regarding communication with Parliament, ministers, ministerial staff, lobbyists, members of the media and members of the public generally; and
- respect the confidentiality and privacy of all information as it pertains to individuals.

Fraudulent and corrupt behaviour

Members are expected to:

- not engage in fraud or corruption;
- report any fraudulent or corrupt behaviour;
- report any breaches of the code of conduct; and
- understand and apply the accountability requirements that apply.

Use of public resources

Members are expected to:

- be accountable for official expenditure;
- use publicly-funded resources diligently and efficiently. These include office facilities and equipment, vehicles, cab charge vouchers, corporate credit cards;
- not use office time or resources for party political work or for personal gain, financial or otherwise;

- keep to policies and guidelines in the use of computing and communication facilities, and use these resources in a responsible and practical manner; and
- be careful to ensure that any travel for official purposes is only done so when absolutely necessary.

Record keeping and use of information

Members are expected to:

- record actions and reasons for decisions to ensure transparency;
- ensure the secure storage of sensitive or confidential information;
- comply with the public sector record keeping plan; and
- where permissible, share information to fulfil their role.

Conflicts of interest

Under Schedule 1 (16). Disclosures of Interests of the ITD Act 1998, a member who has a material personal interest in a matter being considered or about to be considered by the Council must, as soon as possible after the relevant facts have come to the member's knowledge, disclose the nature of the interest at a meeting of the Council. Penalty: \$5,000.

A disclosure under subclause (1) is to be recorded in the minutes of the meeting.

In addition, members are expected to:

- ensure personal or financial interests do not conflict with their ability to perform their official duties in an impartial manner;
- manage and declare any conflict between their personal and public duty; and
- where conflicts of interest do arise, ensure they are managed in the public interest.

Public Sector Requirements

The Public Sector Commissioner monitors compliance with the WA Public Sector Code of Ethics and applicable codes of conduct. The Commissioner may report any public sector bodies, found to be in breach of the codes, to their relevant Minister and to Parliament.

Accordingly members on appointment will:

- Receive a copy of this Charter and are expected to read and abide by it.
- Receive a copy of the Western Australian Public Sector Code of Ethics and are expected to read and comply with it.
- Receive a copy of the ITD Act 1998 and are expected to read and abide by it.

The Council accepts the minimum requirements set out in the Conduct Guide for Boards and Committees. This code of conduct builds on these minimum requirements.

Legislation, Policies and Procedures

Members will be subject to the following legislation, policies and procedures.

Relevant legislation

- Auditor General Act 2006
- Contact with Lobbyists Code
- Corruption and Crime Commission Act 2003
- Equal Opportunity Act 1984
- Fair Trading Act 1987
- Financial Management Act 2006
- Financial Administration and Audit Act 1985
- Freedom of Information Act 1992
- Industrial Relations Act 1979
- Industry and Technology Development Act 1998
- Occupational Safety and Health Act 1984
- Parliamentary Commissioner's Act 1971
- Public Interest Disclosure Act 2003
- Public Sector Management Act 1994
- State Records Act 2000
- State Superannuation Act 2000
- State Supply Commission Act 1991
- Statutory Corporations (Liability of Directors) Act 1996
- Western Australian Equal Opportunity Act 1984
- The Criminal Code
- Other general requirements may be imposed by:
- Administrative Instructions, Approved Procedures, Public Sector Commissioner's Circulars, Premiers Circulars and Delegations, Treasurer's Instructions

Relevant policies/guidelines

- Western Australian Public Sector Code of Ethics 2002
- Public Sector Standards in Human Resource Management 2001
- Department of Premier and Cabinet Disciplinary Procedures Guide
- Equal Opportunity Policy
- Grievance Resolution Policy and Guidelines
- Bullying Policy Among Staff at DOCEP
- Prevention of Violence Against DOCEP Employees
- Reporting Misconduct Policy and Procedures
- Freedom of Information 1 & 2
- Penalties for Non Compliance with Records Management Legislation
- Customer Service Charter
- Occupational Health and Safety Policy

Appendix 2 - The Way Ahead – A work plan for TIAC

THE WAY AHEAD - A WORK PLAN FOR TIAC

INTRODUCTION

During the period of May to October 2012, the Western Australian Technology and Industry Advisory Council (TIAC) undertook a strategic planning process to refine the Council's purpose statement and identify activities for inclusion into its work plan for the next two to four years. The Council also consulted with key stakeholders to canvass a wider range of views in formulating advice on a recommended path for the future of TIAC.

TIAC STAKEHOLDER CONSULTATION FORUMS

In 2011, TIAC conducted a number of stakeholder consultation forums with key stakeholders in the mineral, gas, environmental, health and medical sectors. Common issues and recommended actions for the State Government across the four sectors included:

- the need to identify priorities for research and development to meet the State's requirements;
- the need to adopt a whole of Government approach to science and technology, including the development of a strategic vision and long term plan;
- the need to facilitate increased collaboration, particularly with industry in outcome-focused investment; and
- the need to leverage Federal Government funding and encourage key industry players to assist in funding these initiatives.

The recommendations from the strategic planning process and the previous stakeholder consultation forums have informed TIAC's development of their purpose statement and corresponding work plan.

TIAC'S PURPOSE STATEMENT

TIAC's refined purpose statement promotes a better understanding of the role of the Council and enables it to pursue its purpose more effectively. The Council's proposed purpose statement was presented to the Minister for Science and Innovation in August 2012.

TIAC looks to the future to provide strategic, evidence-based advice to government aimed at identifying and encouraging innovative approaches to development in industry, science, technology and government that drive sustainable and diverse economic growth in Western Australia.

TIAC will enact this purpose statement by:

- *commissioning studies;*
- *monitoring existing trends in innovation and investment;*
- *identifying strategies for enhanced innovation; and*
- *responding to specific government requests for strategic advice.*

TIAC'S FUNCTIONS

In its advice to the Minister of Science and Innovation in August 2012, TIAC included recommendations about changes to the functions of TIAC under the *Industry and Technology Development Act 1998* (ITD Act). In particular, it was recommended that part 1 (a) and (b) of the functions should be amended to read:

- 1) The Council is to:
 - a) provide advice to the Minister, at the initiative of the Council or at the request of the Minister on any matter relating to the objects of this Act; and
 - b) carry out, collaborate in or procure research, studies or investigations on any matter relating to the objects of this Act, including matters relating to –
 - i. establishing a vision and strategy for economic growth in the State generated from industrial development and underpinned by innovative approaches to science and technology;
 - ii. identifying areas where the State has a competitive advantage and/or well-defined needs and influencing government policies to support economic growth in these areas through innovative approaches to industry, science and technology;
 - iii. identifying capacity and capability constraints relating to industrial, scientific and technological activities in the State; and
 - iv. the application of industrial, scientific and technological advances to the services of the Government.

TIAC'S WORK PLAN

In the context of the revised purpose statement and the suggested TIAC functions, the Council has drafted its work plan for the next two to four years. This work plan will commence in January 2013 and will be reviewed on an annual basis.

TIAC identified three over-arching initiatives to focus the Council's activities. The initiatives are outlined below and include the proposed activities that TIAC will undertake in implementing their work plan.

Initiative 1

Demonstrate and promote the economic benefits from science, research and technology and identify ways that the State Government can stimulate development in these areas.

Work has already commenced on the first two activities listed under this initiative.

Activities

- Undertake a research project to establish a coherent integrated rationale for the State Government to demonstrate the value of increased investment in science, technology and innovation as a key factor in achieving continuing growth and diversification of the State's economy.

- Undertake a research project to formulate a strategy and recommendations for the State Government to strengthen science, technology, engineering and mathematics (STEM) education in Western Australian schools through the enhancement and optimisation of formal and external STEM education support.
- Undertake a research project to examine the value of technology clusters (technology parks, start-up/venture capital hotbeds) and their return on investment.
- Investigate opportunities for academia, government and industry to collaborate in a more effective way to address recognised government needs.

Initiative 2

Examine and develop innovative approaches to specific opportunities and challenges facing Western Australia, over the short and long term, in the following areas:

- growing and ageing population;
- water and food security;
- preventive health;
- resource management;
- biodiversity mapping and management;
- sustainable energy solutions; and
- environmental health.

Activities

- Undertake research projects to define specific opportunities and challenges for Western Australia in these areas and understand how these are currently being addressed; identify the associated gaps, capability issues and potential for competitive advantage; recommend innovative approaches to optimising opportunities and addressing challenges.

Initiative 3

Investigate the implications of Western Australia's changing economy to identify new technologies, emerging industries and niches and research how they relate to:

- satisfying the future needs of the job market;
- emerging economies within the region (e.g. India and China); and
- opportunities and challenges created by increased digital capacity and capability through new infrastructure supporting digital technologies.

Activities

- Undertake a research project to identify new technologies or innovative solutions to assist in attracting and retaining employees and develop a more flexible workforce to satisfy the future demands of the job market.
- Undertake a research project to identify the implications of Western Australia's changing economy, the impact on economic development and global competitiveness by investigating opportunities and challenges from emerging economies within the region (e.g. India and China).
- Undertake a research project to investigate the opportunities and challenges created by increased digital capability and analyse the potential economic, environmental and social impacts this presents. Provide recommendations for suitable strategies that Western Australia could adopt to take advantage of new digital technologies and infrastructure.

GUIDING PRINCIPLES

TIAC's activities will aim to provide the State Government with strategic evidence-based advice to inform and influence policy, and make a significant and valued contribution to achieve sustainable and economic growth in Western Australia.

The Council agreed that the following principles need to be satisfied to maintain the focus of the Council's activities.

- Practical
- Measurable
- Achievable
- Beneficial
- Relevant to the ITD Act

NEW MEMBERS

TIAC agreed that, in order to successfully deliver the proposed activities in their work plan, it would be beneficial if additional members were appointed to TIAC. It should also be noted that the terms of four current TIAC members expire in June 2013.

CURRENT PROJECTS

TIAC's new work plan commences in January 2013. TIAC is currently working on a number of projects which will continue until completed. Information about current TIAC projects appears on the TIAC website at www.tiac.wa.gov.au.

Appendix 3 - Economic Growth through Innovation Committee – Terms of reference

Economic Growth through Innovation Committee

Terms of Reference

Note: These terms of reference are to be read in conjunction with the TIAC Committee Guidelines.

BACKGROUND

The Western Australian Technology and Industry Advisory Committee's (TIAC) work plan, *The Way Ahead*, details the TIAC's activities for the next two to four years. *The Way Ahead*, developed in consultation with major stakeholders from the resources, environmental, health and medical sectors, will drive TIAC's future focus. Initiatives include the identification of the economic value arising from investment in science, research and technology; applying innovation to opportunities and challenges facing Western Australia; and investigating the State's changing economy to identify new technologies and emerging industries.

PURPOSE

The *Economic Growth through Innovation* Committee of TIAC (the Committee) will provide evidence based research and findings to TIAC that will progress a major part of the first initiative of the work plan.

In summary the activities undertaken by this Committee will focus on the benefits for Western Australia of investment in research, innovation and technology, avenues for stimulation of improved outcomes from innovative practice, structures and networks required to support sustainable and high quality partnerships between industry, universities and research institutions.

To fulfill this purpose, the Committee will:

- carry out, collaborate in or procure research, studies or investigations;
- liaise or consult with relevant people, bodies or organisation in the course of conducting any research, study or investigation;
- produce a report of the findings of research, study or investigation; and
- provide recommendations and/or strategies that support the findings to TIAC.

OBJECTIVES/ SCOPE

The Committee will undertake the following activities:

undertake a research project to establish a coherent integrated rationale for the State Government to demonstrate the value of increased investment in science, technology and innovation as a key factor in achieving continuing growth and diversification of the State's economy;

undertake a research project to examine the value of technology clusters (technology parks, start-up/venture capital hotbeds) and their return on investment; and

investigate opportunities for academia, government and industry to collaborate in a more effective way to address recognised government needs.

MEMBERSHIP

Membership of the Committee is as follows:

- Mr Andy Farrant (Chair) - TIAC member and Principal, One Degree Advisory;
- Mr Colin Beckett - TIAC member General Manager of the Greater Gorgon Area, Chevron Australia;
- Dr Jim Ross AM - TIAC member and Chair of Earth Science Western Australia;
- Professor Robyn Owens - Deputy Vice-Chancellor (Research), University of Western Australia;
- Dr Peter Lilly - Senior Manager Research and Development, BHP Billiton;
- Winthrop Professor David Pannell – Director, Centre for Environmental Economics and Policy.

MEETINGS

The Committee will meet approximately 4 – 6 times per year for an estimated duration of 2 hours. It is anticipated that committee members will also undertake approximately 10 hours of work out of session per year.

GOVERNANCE

The Committee will uphold the TIAC Committee Guidelines, Operating Protocol and Charter.