

## **Steps that might be taken by the Commonwealth government in order to better demonstrate to business the benefits of higher private sector investment in R&D**

- 9.1 The material in this chapter is organised under the following headings, which themselves are derived from consideration of the evidence presented to the committee during its inquiry:
- increasing awareness of the importance of innovation and commercialisation;
  - identifying national research priorities;
  - encouraging major international corporations to conduct R&D in Australia;
  - improving the take-up of overseas R&D by Australian companies as well as the recognition of R&D conducted overseas by Australian companies;
  - encouraging exporting;
  - encouraging industry associations and clusters;
  - increasing the capacity of SMEs to access capital;
  - improving financial incentives for individuals to conduct R&D and commercialise the outcomes of research;
  - improving government tender and purchasing processes;

- reducing regulatory barriers to business R&D; and
- improving accounting standards and practices so as to better recognise the significance of R&D.

## Increasing awareness of the importance of innovation and commercialisation

9.2 The committee acknowledges that, despite government initiatives like the National Innovation Awareness Strategy (which includes activities like National Science Week and the Prime Minister's Science Prizes) and private sector initiatives like the Design Awards,<sup>1</sup> there still appears to be 'little recognition of the achievements and benefits of Australian innovators by the public at large, and by our captains of commerce'.<sup>2</sup> It was suggested that the Australian government should publicly recognise successful 'technologists' in a manner similar to Australia's treatment of sporting heroes.<sup>3</sup> This would go some way towards addressing the Chief Scientist's call for:

... communicating stories linking science to innovative practices to new products/marketing' so that the wider public gains an 'appreciation of what the science base can deliver'.<sup>4</sup>

9.3 It would also be useful, said an SME, if there were 'presentations from industry leaders who have achieved demonstrable success as a result of increased investment in R&D'.<sup>5</sup> In short, the government could consider introducing prizes for Australia's 'most notable technologists' or the large companies 'that most assisted an inventor to commercialise their product'.<sup>6</sup>

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1 See the products described in the Australian Design Awards publications, Exhibit Nos. 10-15. Also see Australian Design Awards, Submission No. 61, p. 2.

2 Design Institute of Australia, Submission No. 42, p. 6.

3 Australasian Institute of Mining and Metallurgy, Submission No. 3, p. 3.

4 Dr Robin Batterham, Submission No. 25, p. 3.

5 UPSIDE Solutions, Submission No. 23, p. 9. Also Intelligent Manufacturing Systems, Submission No. 35, p. 6: 'The most effective tool to market the IMS program to Australian business has been the formulation of case studies where businesses have undertaken R&D resulting in demonstrable benefit. The formulation and dissemination of such success stories, with examples drawn from and targeted to industry segments, would help stimulate other businesses into investigating R&D opportunities relevant to them. These stories provide the cultural icons for others to aspire to and emulate'.

6 Bosmin, Submission No. 2, p. 4.

- 9.4 The committee notes that the Prime Minister's Science, Engineering and Innovation Council was advised recently that Australia lacked entrepreneurial managers with the appropriate blend of business management skills and experience and knowledge of high-growth ventures.<sup>7</sup> Some of the suggestions to address this issue include:
- fostering greater networking by 'not just top company people but research people, academics, CRCs, SMEs and big corporations' in activities that include 'training, visits, interactive activities and even partnerships';<sup>8</sup>
  - 'a stronger system of providing advice [to those researchers endeavouring to commercialise], through mentoring groups or strengthening the technology transfer skills of research organisations';<sup>9</sup>
  - establishing 'a National Entrepreneurial Mentoring Group strongly supported by the Prime Minister... [to] raise the profile and recognise the value of entrepreneurship to the Australian economy';<sup>10</sup>
  - 'education programs within undergraduate engineering and science courses on the subject of commercialisation';<sup>11</sup>
  - promoting education programs 'for senior executives and company analysts' about the role of innovation in successful businesses';<sup>12</sup>
  - incorporating information about commercialisation in undergraduate engineering and science courses;<sup>13</sup>

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7 Australian R&D Review, December 2002, p. 3, referring to a paper entitled *Management Skills for High-Growth Start-Up Companies: Unleashing Australia's Entrepreneurial Potential*.

8 Prof. Murray Gillin, Transcript, p. 93.

9 Federation of Australian Scientific and Technological Societies, *Scientists commercialising their research*, by Toss Gascoigne and Jenni Metcalfe, FASTS Occasional Paper Series, No. 2, April 1999, Exhibit No. 19 (Executive Summary).

10 Australian R&D Review, December 2002, p. 4, referring to a paper entitled *Management Skills for High-Growth Start-Up Companies: Unleashing Australia's Entrepreneurial Potential*.

11 Australian Industrial Research Group, Submission No. 53, p. 3; also Dr Robin Batterham (Chief Scientist), Transcript p. 475: 'I think that engineers and medical scientists and biologists need exposure to, as a minimum, how to read a balance sheet and, secondly, how commercialisation of new technology is so important and what is involved in it'.

12 Australian Industrial Research Group, *ibid*.

13 *ibid*.

- ‘making accountants aware, and making sure accountants are making their clients aware, of what is available’ in relation to R&D incentive programs;<sup>14</sup>
- encouraging ‘greater mobility and movement between the academic community, the research community and the business community’;<sup>15</sup>
- encouraging the return of expatriate Australians with ‘experience of start-ups’ and ‘good established contacts with major players’.<sup>16</sup>

9.5 The committee considers that all of these suggestions have merit and would go some way toward equipping scientists and technologists with ‘the skills and ability to move freely between industry and public sector research institutions.’<sup>17</sup> (Suggestions relating to improved mobility between researchers and businesses are addressed in Chapter 10 of this report.)

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### **Recommendation 1**

9.6 **The committee recommends that, in order to increase awareness of the importance of innovation and commercialisation, the Commonwealth government:**

- **promote case studies which show the success of companies that have benefited from R&D;**
- **introduce a system of prestigious awards to recognise individuals and companies that successfully commercialise their inventions;**
- **encourage, and facilitate where appropriate, the formation of mentoring groups to provide advice to researchers and businesses about commercialisation; and**
- **conduct education programs about taking a new product to market.**

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14 Mr Tony Harrison (Yaltara Software Pty Ltd), Transcript, p. 534.

15 Ms Narelle Kennedy and Ms Catherine Livingstone (Australian Business Foundation), Transcript, pp. 290-291.

16 Mr John Yencken, Transcript, p. 91.

17 Federation of Australian Scientific and Technological Societies, *Australian Science: Investing in the Future*, 2002, p. 4 (Exhibit No. 18).

- 9.7 The COMET program recognises the importance of mentoring as a means of commercialising R&D in small, start-up companies (see paragraphs 3.37-3.40). The program assigns a private sector business manager/adviser to a company to assist with business planning, market research and intellectual property strategies. It would be useful if the mentoring aspects of the program could be extended to the widest possible number of SMEs.

## Recommendation 2

- 9.8 **The committee recommends that the Commonwealth government expand the mentoring services available to small and medium-sized enterprises beyond those currently offered by the COMET Program.**
- 9.9 An essential aspect of greater awareness of innovation will come from the widespread use of the ABS surveys of innovative activity that are in preparation (see chapter 2). These surveys are expected to cover non-technological innovation, such as organisational and managerial innovation, as well as technological innovation. The committee considers that these surveys are essential for increasing our level of knowledge about the amount (and nature) of innovative activity in Australia, especially if they incorporate information about 'the costs of innovation (and their breakdown into R&D and other components), the extent of linkages between firms and research institutions... and the use (or non-use) of relevant government programs'.<sup>18</sup> However, the committee was concerned to learn that the surveys are 'subject to available funding'.<sup>19</sup>

## Recommendation 3

- 9.10 **The committee recommends that the Commonwealth government ensure that the Australian Bureau of Statistics undertakes surveys of innovative activity in the Australian economy, such surveys to include details of the non-technological innovation that is taking place in Australia.**

18 Australian Bureau of Statistics (ABS), *Newsletters: Science and Technology Statistics Update*, Bulletin No. 7, December 2002, p. 10.

19 *ibid.*

- 9.11 Further to the issue of ABS information-gathering, the Australian Mineral Industries Research Association International (AMIRA) called for more detailed information about the effects of business R&D expenditure on the whole economy, not just the particular industry sector in which the business operates:

There is more that could be done in correlating what industry sectors are doing with their field of research and with their socioeconomic objective, and then you can start to see some interesting crossovers, such as that the minerals industry spends more on environmental R&D than any other industry sector in the country.<sup>20</sup>

- 9.12 AMIRA gave as an example R&D developments in the gold industry which led to:

... spin-offs into new sectors such as environmental monitoring by remote sensing, start-ups in aeromagnetism, software and instrumentation and digital data processing.<sup>21</sup>

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#### **Recommendation 4**

- 9.13 **The committee recommends that relevant industry associations, in conjunction with the Australian Bureau of Statistics, identify the economic benefits of research ‘crossovers’ such as that between the minerals/mining sectors and the environment sector.**

- 9.14 An important activity that will foster greater knowledge of the importance of innovation is the Commonwealth government’s initiative, announced in November 2002, to ‘map’ Australia’s ‘innovation landscape’ in order to obtain ‘a comprehensive overview of the Australian science, technology and innovation system as a whole’, both public and private. In announcing the initiative, the Commonwealth Minister for Education, Science and Training stated:

This exercise will be conducted in cooperation with state and territory governments, industry and the research community and other interested parties... The work will draw on existing material such as that produced during the development of *Backing Australia’s Ability*. These include the Review of National Research Priorities, the Higher Education

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20 Mr Dick Davies (Australian Mineral Industries Research Association International), Transcript, p. 254.

21 Australian Mineral Industries Research Association, Submission No. 40, p. 2.

Review, the Review of Teaching and Teacher Education, the Report by the Chief Scientist in November 2000 and the Report on the Innovation Summit Implementation Group.<sup>22</sup>

- 9.15 The committee joins the Chief Scientist in commending this initiative.<sup>23</sup>

## Identifying national research priorities

- 9.16 The committee notes the recent announcement by the Prime Minister of four 'national research priorities' covering 'an environmentally sustainable Australia, promoting and maintaining good health, frontier technologies for building and transforming Australian industries, and safeguarding Australia'. The Prime Minister's announcement followed consultation with his Science, Engineering and Innovation Council and extensive public consultation. The four research priorities are 'a signal' about where the government's research focus lies,<sup>24</sup> and:

... give us an opportunity to go across the whole of government so that the different agencies... can get collaborative acts together to focus on these priorities.<sup>25</sup>

- 9.17 The Chief Scientist indicated that the government would review the way in which 'individual agencies, the ARC, CSIRO, DSTO, and so on,' adjusted to these research priorities.<sup>26</sup> This will provide the opportunity to implement a whole-of-government approach to the research that is undertaken by Commonwealth agencies, including developing ways to deal with 'any structural impediments or other issues likely to limit [the capacity of agencies] to respond'.<sup>27</sup> This should satisfy the call by the Australian Academy of Science for the

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22 Media release by Dr Brendan Nelson MP entitled *Mapping Australia's Innovation Landscape*, 21 November 2002.

23 Dr Robin Batterham (Chief Scientist), Transcript, p. 470: 'The mapping exercise... should be taken fairly seriously as a way of identifying some strengths and weaknesses and where we might go'.

24 Prime Minister John Howard MP, Transcript of a media conference about national research priorities, 5 December 2002, p. 4.

25 Dr Robin Batterham, Chief Scientist, Transcript of a media conference about national research priorities, 5 December 2002, p. 4.

26 *ibid.*

27 Information obtained from the Commonwealth Department of Education, Science and Training web site: [www.dest.gov.au/priorities/implementation.htm](http://www.dest.gov.au/priorities/implementation.htm), accessed on 11 March 2003.

Commonwealth government to improve the coordination of policy 'across portfolios' in order 'to generate innovative policy solutions'.<sup>28</sup>

- 9.18 Also, it would provide the opportunity to address the problems of Commonwealth agency coordination outlined by the local pharmaceutical industry:

With the [United States] Food and Drug Administration, at least you have one agency with multiple departments which you go to for veterinary, human and genetically modified organism products, but in Australia you go to the National Registration Authority for veterinary, you go to the Therapeutic Goods Administration for human goods and you go the Office of the Gene Technology Regulator for recombinant organisms.<sup>29</sup>

- 9.19 In various other areas, agencies are being encouraged to adjust their research activities in line with Commonwealth priorities, for example, for some time RDCs have been required to integrate the government's priorities for rural R&D into their corporate plans;<sup>30</sup> a portion of Australian Research Council funds are required to reflect national priorities;<sup>31</sup> and the CSIRO has adopted its *Flagship* program of national research priorities.<sup>32</sup> While none of these measures go as far as Japan which, stated the Executive Director of an international corporation, funds 30% of a firm's R&D 'where the project is deemed to be in the national interest',<sup>33</sup> they indicate a growing trend to link research activity to nationally identified priorities.

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28 Australian Academy of Science, Submission No. 45, p. 8.

29 Dr Meera Verma (BresaGen Ltd), Transcript, p. 52.

30 Commonwealth Department of Agriculture, Fisheries and Forestry, Australia, Submission No. 76, p. 7: The Commonwealth government's priorities for rural R&D are sustainable natural resource management; whole of industry approach; biotechnology; increases in trade and market access; clean and green image; food safety; and improving our human resources (*ibid*).

31 'Funding in ARC priority areas in Discovery-Projects and Linkage-Projects Round One', available online at: [www.arc.gov.au/pdf/Priority\\_areas.pdf](http://www.arc.gov.au/pdf/Priority_areas.pdf), accessed on 12 May 2003. The four priority funding areas for 2003 were complex/intelligent systems; genome/phenome research; nano- and bio- materials; and photon science and technology. Also Mr John Boshier (Institution of Engineers, Australia), Transcript, p. 423.

32 Mr Mehrdad Baghai (CSIRO), Transcript, p. 243: 'What we are trying to do is organise scientists from across the different divisions to focus on... eight public policy areas which we feel are incredibly important to the nation's agenda'.

33 Mr Brendan McManus (NEC Australia Pty Ltd), Transcript, p. 621.



- 9.20 The identification of national priorities necessarily involves the states and local governments. Cooperation between the Commonwealth and state governments was said to be essential because ‘we are too small a nation... to allow silo mentalities to rule’.<sup>34</sup> The existing level of cooperation was described as good.<sup>35</sup>
- 9.21 The committee was informed about a number of successful state government initiatives to attract R&D investment, such as the new Motorola Australia Software Centre in Western Australia<sup>36</sup> or to state programs to encourage innovative activity, such as the South Australian Bio Innovation Program,<sup>37</sup> the Victorian Science and Technology Infrastructure Fund<sup>38</sup> and the Queensland Innovation Start-Up Scheme.<sup>39</sup> Further, South Australian SMEs praised their state government’s Centre for Innovation, Business and Manufacturing which assists SMEs, including micro-businesses, to prepare grant applications and also provides them with some funding.<sup>40</sup>
- 9.22 In relation to state government programs, one international corporation expressed the view that:
- State governments have been much more successful in branding their states as smart states... than we have been at the federal level.<sup>41</sup>

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34 Dr Robin Batterham (Chief Scientist), Transcript, p. 472.

35 Ms Patricia Berman (Commonwealth Department of Industry, Tourism and Resources), Transcript, p. 222.

36 Prof. Michael Barber (Australian Academy of Science), Transcript, p. 3 and pp. 9-10.

37 Mrs Ann Nelson (Bio Innovation South Australia), Transcript, p. 508.

38 Mr Peter Laver (Council for Knowledge, Innovation, Science & Engineering, Victoria), Transcript, p. 74. In August 2002 the Victorian government announced \$59 million in grants for 16 projects under the second round of the Science, Technology and Innovation (STI) Infrastructure program (*R&D Info*, 5 August 2002) and it announced further funding of \$310 million for STI initiatives in its ‘Victorians. Bright Ideas. Brilliant Future’ statement (*R&D Info*, 8 November 2002).

39 *Australian R&D Review*, December 2002, p. 15.

40 Mrs Ann Nelson (BioInnovation South Australia), Transcript, p. 527: ‘The Centre for Innovation, Business and Manufacturing is a part of the state government that deals with the small business community’; Mr Geoffrey Rohrsheim (Strategic Data Management Pty Ltd), *op cit.*: The Centre for Innovation, Business and Manufacturing ‘is fantastic’.

41 Mr Alex Gosman (GlaxoSmithKline), Transcript, p. 204.

- 9.23 The committee's attention was also drawn to measures by local governments to encourage innovative activities, sometimes by acting as information exchanges for local businesses (for example, the Frankston and Kingston Councils in Melbourne<sup>42</sup>) and sometimes by grouping Commonwealth, state and local facilities in the one location to facilitate the dissemination of information about R&D programs (for example, Sutherland Shire Council in NSW).<sup>43</sup> Local councils can also encourage 'clusters' in specific research areas, such as the Victorian Biotechnology Councils Network<sup>44</sup> and the Western Sydney IT cluster. The latter has even established a presence in a Singapore technology hub in order to give Western Sydney IT companies a springboard into Asia.<sup>45</sup>
- 9.24 Among the submitters calling upon the Commonwealth government to establish national research priorities were a state government,<sup>46</sup> a financial association,<sup>47</sup> professional bodies,<sup>48</sup> a public sector research agency<sup>49</sup> and business groups.<sup>50</sup>

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42 Another example is the Shoalhaven Industry and Business Association Inc., Submission No. 27.

43 Mrs Suzanne Hudson (S. Hudson and Associates Pty Ltd), Transcript, p. 279: Sutherland Council in southern Sydney has 'funded an area... where the Austrade person, the [AusIndustry] person, the Business Enterprise Centre person and some facilities are all located on the one floor. They all talk to each other'.

44 *Australian R&D Review*, February 2003, p. 12.

45 *Australian R&D Review*, November 2002, p. 12.

46 Queensland Government, Submission No. 71, p. 1: There is a 'lack of consistency in regard to government research priorities'.

47 Mr Graham Carew (Taxation Institute of Australia), Transcript, p. 159: Australia should 'target particular industries' for special treatment in order to enable Australia to 'promote itself as a centre of excellence in certain technologies'.

48 Mr John Boshier (Institution of Engineers, Australia), Transcript, p. 414: 'There should be a national strategic approach to R&D... It is our view that Australia needs a long-term technology plan, which should include a comprehensive statement of national priorities for science, engineering and also technology research'.

49 Mr Robert Muir (Australian Nuclear Science & Technology Organisation), Transcript, p. 348: 'We have to get on the radar screen in terms of global science and technology' by establishing 'areas of national focus'.

50 Australian Paper Industry Council, Submission No. 44, pp. 2-12: We need 'to identify key R&D sectors for further development in advancing Australia's potential to foster and nurture niche R&D opportunities'.

## Recommendation 5

### 9.25 **The committee recommends that the Commonwealth government, in consultation with the states:**

- **identify key R&D sectors for further development;**
- **encourage state governments and local councils to promote R&D within their jurisdictions; and**
- **assist the efforts of local governments to encourage small and medium sized enterprises to share information about research and commercialisation.**

9.26 The committee acknowledges the view of some witnesses that an important national priority involves increasing the number and skill levels of engineers, scientists and technologists.<sup>51</sup> Specific suggestions were that people retraining from one industry sector to another should be eligible for the same tax concessions as currently exists for re-training within the one sector,<sup>52</sup> and that group training schemes such as the HunterNet Scheme be encouraged (it allows 'graduates to move between companies [thus] gaining practical training experience').<sup>53</sup>

9.27 The Institute of Engineers added that 'engineering should be encouraged in primary and secondary schools, and private industry should be more involved in curriculum development' in universities.<sup>54</sup> Two science-based organisations called for the reduction, or even removal, of the Higher Education Charge (HECS) from science courses to encourage young people to enter these areas.<sup>55</sup> The IMS supported this suggestion.<sup>56</sup> The committee agrees that specific action is needed to encourage young people to take up technology-oriented careers.

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51 Mr John Boshier (Institution of Engineers, Australia), Transcript, p. 414: 'A skilled engineering workforce is essential... [but] at present Australia is importing a significant number of engineers every year'; Holden, Submission No. 57, pp. 8-9: 'Some of Australia's industry is technically inadequately prepared to compete in the global market place'; Dr Stephen Sykes (Flavourtech), Transcript, p. 461: 'Probably the main problem facing all SMEs... [is] too low an output of technological professionals'.

52 Ericsson Asiapacifclab Australia, Submission No. 14, p. 3.

53 Mr John Boshier (Institution of Engineers, Australia), Transcript, p. 414.

54 Institution of Engineers, Australia, Submission No. 72, pp. 4-19.

55 Australian Geoscience Council, Submission No. 20, p. 4; also Dr Stuart Carr (Australian Nuclear Science & Technology Organisation), Transcript, p. 347.

56 Dr Edwin van Leeuwen (Intelligent Manufacturing Systems), Transcript, p. 314.

## Recommendation 6

9.28 The committee recommends that the Commonwealth government, in conjunction with the states:

- assess the efficacy of current efforts to improve students' knowledge of, and interest in, technology-oriented careers, with a view to introducing specific schemes to encourage young people to undertake the study of engineering and technology; and
- promote the interest of school students in such careers by publicising the achievements of successful engineers and technologists.

## Encouraging major international corporations to conduct R&D in Australia

9.29 The general view of submitters was that major international corporations contributed more to the Australian economy than they took out, and hence they should be encouraged to undertake R&D in Australia.<sup>57</sup> The Chief Scientist stated that:

R&D done by multinationals in Australia is worthwhile because it has all sorts of impacts apart from just doing more R&D: it is in the number of people who are available; it is in the training; it is in the notion that we might provide more postdocs.<sup>58</sup>

9.30 Similarly, the Australian Business Foundation said that:

Not only must we attract foreign multinational corporations for their jobs and money, we must attract them with the explicit purpose of transferring intangible knowledge and skills to Australian firms through research and training institutions, suppliers and customers. This will then enable further building of our R&D capacity, global management expertise and exports.<sup>59</sup>

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57 Australian Geoscience Council, Submission No. 20, p. 4; Ms Narelle Kennedy (Australian Business Foundation), Transcript, p. 283; and Federation of Australian Scientific and Technological Societies, Exhibit No. 18, *Australian Science: Investing in the Future*, p. 12.

58 Dr Robin Batterham (Chief Scientist), Transcript, p. 473.

59 Australian Business Foundation, Exhibit No. 25, *Friend or Foe? Leveraging Foreign Multinationals in the Australian Economy*, p. 9.

- 9.31 In order to encourage international corporations, the Chief Scientist suggested that the Commonwealth government should offer:
- ... special deals such as offsets programs (90% of R&D would otherwise be in the country of head office), by encouraging States and Territories to focus on their niche areas of expertise to collaborate for both their advantage and that of Australia... [This was because] company size and its ownership have a significant effect on R&D intensity in some sectors and shed light on reasons for companies' performance/differences.<sup>60</sup>
- 9.32 The Academy of Science agreed with the suggestion of an offset program.<sup>61</sup> Further, an industry association suggested that, in order to compete against other countries, for example, Singapore ('where a 200% concession is available'), the Commonwealth government should consider enticing major international corporations to site their R&D investment in Australia by offering up to a 200% tax concession.<sup>62</sup> Also, it was suggested that the Commonwealth government could encourage R&D investment by waiving royalty payments in return for an increased investment in R&D (as was done in the case of Cochlear).<sup>63</sup>
- 9.33 The committee notes that in September 2001 the Commonwealth government announced a funding package for Australia's local film industry that includes a refundable tax offset whereby eligible firms that complete film production in Australia can claim the offset. The Department of Communications, Information Technology and the Arts stated that 'the tax offset has been designed to keep Australia competitive in an increasingly global film production environment'.<sup>64</sup> A similar use of the refundable tax offset as a means to encourage international corporations to site their R&D investment in Australia may be appropriate.

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60 Dr Robin Batterham, Submission No. 25, p. 3.

61 Australian Academy of Science, Submission No. 45, p. 5: The government 'should consider implementing a formal offset program when giving assistance to major industrial developments' whereby such assistance is contingent upon technology transfer to Australia (usually in areas that are 'linked to domestic R&D aimed at customising and refining a core technology').

62 Australian Information Industry Association, Submission No. 74, pp. 12-13.

63 Information obtained from the AusIndustry web site, '*Commonwealth government and Cochlear agree on increased R&D investment*,' [www.ausindustry.gov.au/content/azindex.cfm](http://www.ausindustry.gov.au/content/azindex.cfm), accessed on 20 February 2003.

64 Commonwealth Department of Communications, IT and the Arts, *Annual Report 2001-02*, p. 32.

9.34 Submitters also suggested that large international companies needed more detailed information about the nature of research that is taking place in Australia if they are to convince their head offices of the merit of establishing facilities in this country<sup>65</sup>—such information is not easy to come by at the moment, stated one international company.<sup>66</sup> In this respect, the committee notes that the ‘revamped’ Invest Australia has been instructed to:

... be more strategic in targeting firms and other potential investors and in using the Commonwealth’s resources for maximum exposure.<sup>67</sup>

9.35 However, an industry association thought that Invest Australia should consult major international corporations about the nature of the information that is most useful to their efforts to encourage a favourable decision by the head offices to invest in Australia, and adjust its promotion efforts accordingly.<sup>68</sup> This should comprise part of an overall strategy by the government to actively ‘manage’ the relationship with major international corporations, in order to encourage them to remain in the country.<sup>69</sup>

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65 Australian Electrical and Electronic Manufacturers' Association Ltd, Submission No. 68, pp. 6-7.

66 Mr David Bolt (General Manager, Intel Pty Ltd, and member of the Australian Information Industry Association), Transcript, p. 443: ‘There is a challenge and quite an expense in identifying the research that is going on at an appropriate level for the due diligence process. That takes a fair bit of investment up-front to delve into the current projects and get a close enough understanding about what is going on, with a view to whether that is a viable research project for the multinational company to get engaged in’. Also Ms White (Australian Information Industry Association), Transcript, p. 452: ‘You might happen across a research project going on inside a university that is tremendously important and could be world-beating in a project you are working on in industry. Ninety-nine times out of a billion you do not come across it, do not know about it, do not know it has ever existed’.

67 Information obtained from the Commonwealth Department of Foreign Affairs and Trade web site: [www.dfat.gov.au/toos/archive/2002/ch4.html](http://www.dfat.gov.au/toos/archive/2002/ch4.html), accessed on 10 March 2003.

68 Ms Heather Ridout (Australian Industry Group), Transcript, p. 134.

69 Ms Catherine Livingstone (Australian Business Foundation), Transcript, p. 288; also Nortel Networks, Submission No. 70, p. 9: ‘Acquiring an R&D investment is not a one-off win for Australia; on-going attention to retention of the investment is essential’.

## Recommendation 7

9.36 **The committee recommends that the Commonwealth government seek to attract major international corporations to site their R&D facilities in Australia and actively manage an on-going relationship with these companies by:**

- **considering the use of a refundable tax offset whereby major international firms choosing to site new R&D investment in Australia can claim the offset;**
- **regularly meeting with the major international corporations already resident in Australia so as to refine, where necessary, the government's support programs in order to retain those companies' R&D investments; and**
- **incorporating input from international corporations into the operations of InvestAustralia.**

### **Improving the take-up of overseas R&D by Australian companies as well as recognition of R&D conducted overseas by Australian companies**

9.37 The importance of encouraging the take-up of overseas R&D was put by the Commonwealth Department of Industry, Tourism and Resources in the following way:

For a small country such as Australia, a potentially important influence on productivity and output growth is the effect of improvements over time in the quality and technical content of imported inputs (technology transfers) and other research spill-overs from other countries. Benefits of foreign R&D are likely to flow to Australia through the import of improved machinery, equipment and supplies from overseas and the interaction of foreign and Australian researchers. After taking both of these factors into account, the [Productivity] Commission found that a one per cent rise in foreign R&D stocks would raise Australian multi-factor productivity by between 0.028 and 0.08 %, yielding an economy-wide rate of return to foreign R&D of 8-23%.<sup>70</sup>

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70 Commonwealth Department of Industry, Tourism and Resources, Submission No. 38, p. 4.

- 9.38 Australian businesses also urged the committee to recommend steps to improve the take-up of overseas R&D.<sup>71</sup> The Australian Mineral Industries Research Association stated that it utilises both government and private sector funding from 30 organisations to facilitate access ‘to the 98% of global R&D that occurs outside Australia’.<sup>72</sup> The take-up of overseas R&D, suggested one industry association, would be facilitated by the introduction of ‘tax incentives for companies to access state-of-the-art overseas “core technology”’.<sup>73</sup>
- 9.39 The committee notes that the government’s Innovation Access Program includes measures like the InnovationXchange (see paragraph 3.17) that increase access by Australian researchers and firms to global research and technologies. Such information is also passed on by Austrade at regional seminars within Australia. It would be useful to coordinate the provision of information about global research and technologies within one national program.

### Recommendation 8

- 9.40 **The committee recommends that the Commonwealth government, as part of a program to support the take-up by Australian businesses of R&D that is developed offshore, consider developing programs to familiarise businesses with overseas research.**

71 Submission by Tom Stoddart Pty Ltd to the Queensland Minister for Innovation and IT, Jude 2002, reproduced in the Transcript, p. 376: Though ‘we invest a significant amount of our funds into R&D each year... [between] 3-5%... it is oriented more towards the product development side rather than research... Most of the research [affecting the company] is... done abroad and it would be unlikely that there is sufficient critical mass in Australian industry to support cutting edge research in this area. However, the application and utilisation of this technology locally is necessary if we are to continue to compete internationally’; also Mr Dick Davies (Australian Mineral Industries Research Association International), Transcript, pp. 264-265: ‘I think it would be very difficult to get manufacturing industries like the furniture industry, which is not famous for doing R&D, to go straight into supporting R&D programs. There needs to be a transition program to culturally accustom them to the benefits of technology. The sensible thing to do, if you are in that situation, is not to reinvent the wheel but to buy in, or have some mechanism for buying in, what is available internationally and, having done that, perhaps decide that you need to start to tailor-up things to your particular circumstances. Making the leap from no research to supporting start ups or CRCs or whatever is very difficult’.

72 Australian Mineral Industries Research Association International, *op cit*.

73 Australian Paper Industry Council, Submission No. 44, p. 10.



- 9.41 An industry association thought that ‘removal of the 10% limit on overseas R&D that can be deducted’ would encourage Australian businesses, whether SMEs or major international corporations, to undertake overseas R&D where appropriate.<sup>74</sup> The same association suggested that Australian subsidiaries of global companies which conduct R&D in Australia, though manufacturing offshore, should be eligible for the tax concession, provided that these companies can show a demonstrable benefit to Australia.<sup>75</sup>
- 9.42 The committee is aware that, subject to IRDB approval, some overseas R&D activities may be eligible for the tax concession if the activities cannot be carried out in Australia and if no more than 10% of the total expenditure on an R&D project relates to overseas R&D activities. However, the 10% limit is a problem to at least one Australian company heavily reliant on R&D (Cochlear) which stated that:
- ... the eligibility of overseas research is absolutely vital, with 97% of our sales overseas... [because] we need to link into the universities that we work with overseas and participate in some of the work which they are doing over there... [but] we keep bumping into that 10% rule [despite the fact that] all the benefits [of our research] are going to come back to Australia.<sup>76</sup>

## Recommendation 9

- 9.43 **The committee recommends that the Commonwealth government waive the current 10% limit on overseas R&D that can be deducted, for investments of demonstrable benefit to Australia and where no equivalent domestic R&D provider is available.**

## Encouraging exporting

- 9.44 The committee accepts that, ‘for Australian companies to grow, they need to look to overseas opportunities’.<sup>77</sup> Many SMEs are already exporters, including of high-technology products to the United

74 *ibid.*

75 *ibid.*; also Australia-Israel Chamber of Commerce, Exhibit No. 9, *The Economic Benefits of Innovation Policy: Lessons for Australia from Israel’s Experience*, p. 6.

76 Mr Neville Mitchell (Cochlear Ltd), Transcript, p. 605 and p. 623.

77 Australian Paper Industry Council, Submission No. 44, p. 5.

States.<sup>78</sup> The committee acknowledges the government's commitment to double the number of exporters by 2005;<sup>79</sup> and notes that some states have made similar commitments (for example, Victoria).<sup>80</sup> The committee acknowledges the various government measures to foster exports.

- 9.45 The committee notes widespread praise for recent changes to Austrade that increase its effectiveness in promoting Australian exports (Austrade is 'terrific', said a large exporter).<sup>81</sup> However, one witness regretted Austrade's unwillingness to act (as it did in the 1980s) as the prime contractor for major export orders, thus providing valuable protection for the smaller Australian companies that formed part of a contracting consortium.<sup>82</sup>
- 9.46 The same witness suggested that Australia's exports of high technology products and processes to the US would be facilitated by the adoption of a scheme similar to a Canadian government program which identifies 'US government procurement programs that are coming in the next two-three years and [then] focuses its own requirements to be ahead of those programs'.<sup>83</sup> The result was said to be that Canadian companies 'win an amazing proportion of those programs'.<sup>84</sup> The committee considers that such a program could be useful for Australian high-tech companies seeking to sell in the US market.
- 9.47 Two further issues of concern about encouraging exports were raised by witnesses. One concerned the Export Market Development Grants Scheme (EMDG) which provides direct financial assistance in the form of taxable grants to SMEs to assist their export promotion activities. It is paid as a 50% subsidy for marketing and promotion expenditures, with eligible SMEs able to receive eight grants of up to \$200,000 in total. The scheme is fixed at \$150 million per annum. In

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78 For example, Dr Ben Greene (Electro Optic Systems Pty Ltd), Transcript, p. 585: 'As a high-tech company, our markets have always been principally in the US.'

79 The Hon Mark Vaile (Minister for Trade), *Knowing and Growing the Exporter Community*, Austrade 2002, Foreword p. 3; also Ms Heather Ridout (Australian Industry Group), Transcript, p. 128: 'The government has committed itself to a target of doubling the number of exporters by 2005'.

80 *Australian R&D Review*, February 2003, p. 12.

81 Dr James Fox (Australian Innovation Association), Transcript, p. 175; also Ms Heather Ridout, *op cit.*: 'Austrade has a new chairman and a new chief executive officer, and it now seeking to develop real alliances with organisations such as the Australian Industry Group to drive a stronger export culture in Australia'.

82 Dr Ben Greene (Electro Optic Systems Pty Ltd), Transcript, p. 599.

83 *op.cit.*, p. 585.

84 *ibid.*

2000-01 there were about 3,000 recipients, with the average grant being around \$46,000.<sup>85</sup>

9.48 The committee was told by one Australian exporting company that ‘the EMDG for us meant that in a year we could typically add an extra person outside the country, so it was very powerful for us’.<sup>86</sup> Another witness stated that, in view of the importance of promoting exports, it was ‘wrong’ to cap the scheme.<sup>87</sup>

9.49 The second issue of concern to some witnesses was the importance of negotiating suitable trade agreements that guarantee access by Australian exporters to other markets, for example, the Federal Chamber of Automotive Industries stressed that:

... the Chinese and ASEAN markets present a significant export opportunity for the Australian industry if improved access to these markets is secured through either multi-lateral or bi-lateral trade agreements.<sup>88</sup>

9.50 The committee notes the efforts of past and present Commonwealth governments to pursue a range of strategies to increase market access for Australian exporters, including through the World Trade Organisation and through bilateral free trade agreements (such as that with Singapore).

## Recommendation 10

9.51 **The committee recommends that the Commonwealth government, as part of its efforts to increase the incentives for Australian firms to export, consider the following actions:**

- **increase the cap on the Export Market Development Grants Scheme to, at the least, maintain its real value;**
- **introduce a program to inform Australian high-technology companies about government procurement programs in other countries. For example, the United States government**

85 Information obtained online at: [www.austrade.gov.au](http://www.austrade.gov.au) (export grants), accessed on 12 May 2003; and Department of the Parliamentary Library (Information and Research Services), *Export Market Development Grants Amendment Bill 2002*, 29 May 2002, pp. 1-2.

86 Dr James Fox (Australian Innovation Association; and Managing Director, Vision Systems Ltd), Transcript, p. 174.

87 Ms Heather Ridout (Australian Industry Group), Transcript, p. 128.

88 Federal Chamber of Automotive Industries, Submission No. 73, p. 19.

**procurement programs (in advance of the release of actual tenders by US agencies); and**

- **accelerate the negotiation of trade agreements that facilitate access by Australian companies to overseas markets.**

## **Encouraging industry associations and clusters**

9.52 Collaboration between companies can involve industry clusters as well as the CRC model which focuses on getting the IP ‘out of the university sector back into industry’.<sup>89</sup> Another model, said the IMS, involves the ‘funding of clustered companies that have agreed on commercialisation of an R&D plan’.<sup>90</sup> The Federation of Australian Scientific and Technological Societies (FASTS) thought that SMEs in industries with common interests should be encouraged to collaborate when seeking research funds<sup>91</sup> or, said another witness, when common problems have been identified (especially at the state level).<sup>92</sup> The Queensland Manufacturing Leaders’ Group considered that greater use of industry associations would encourage the ‘exchange of technology and ideas... and [break down] the secretiveness that occurs in some competitive work’.<sup>93</sup>

9.53 The committee is particularly interested in projects that encourage collaboration by SMEs within the one industry, including in relation to pre-competitive R&D. The Federation of Australian Scientific and Technological Societies suggested that governments should encourage SMEs in industries with common interests to set up research funding bodies via voluntary sector levies, along the lines of the rural Research and Development Corporations:

These funding bodies can then consider specific research proposals from universities, government and private organisations that relate to generic areas of interest for the industry, rather than for proprietary applications.<sup>94</sup>

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89 Mr Angus Robinson (member of Intelligent Manufacturing Systems, and Chief Executive of the Australian Electrical and Electronic Manufacturers Association), Transcript, p. 322.

90 *ibid.*

91 Federation of Australian Scientific and Technological Societies, Submission No. 51, p. 8

92 Prof. Murray Gillin and Mr John Yencken, Submission No. 19, p. 4.

93 Mr Bill Stoddard (Queensland Manufacturing Leaders’ Group), Transcript, p. 379.

94 Federation of Australian Scientific & Technological Societies, Submission No. 51, p. 8.

9.54 In order to encourage ‘more generic research and encourage businesses to pool their contributions’, it was suggested that the government consider:

... defraying [the] expenses of industry-funded research organisations to develop and broker research projects for SME client companies.<sup>95</sup>

### Recommendation 11

9.55 **The committee recommends that the Commonwealth government:**

- **encourage small and medium-sized enterprises in industries with common interests to set up research funding bodies via voluntary sector levies; and**
- **develop a program (perhaps along the lines of the highly successful rural Research and Development Corporations) to financially assist such research bodies.**

### Increasing the capacity of SMEs to access capital

9.56 The committee is pleased that the Commonwealth government’s Venture Capital Limited Partnerships (VCLP) program commenced in December 2002. The program is designed to attract certain non-resident tax-exempt funds for investment in Australian businesses. It provides for a limited partnership to apply to the Pooled Development Funds Registration Board for registration as a VCLP<sup>96</sup> and, if successful, for the VCLP ‘not [to] be taxed as a company but [to] be a flow-through vehicle for taxation purposes’,<sup>97</sup> meaning that capital gains or losses will flow straight through to end-investors rather than venture fund managers. The Australian Venture Capital Association (AVCAL) stated that:

Such limited partnership structures are the investment vehicles of choice in all major venture capital industries worldwide... [The new structures] mean that large overseas pension funds and others looking at Australia know they can

95 Mr Gerry Biddle, Submission No. 32, p. 15.

96 *Summary of AusIndustry Products* AusIndustry, 5 February 2003.

97 Information obtained from the AusIndustry web site: [www.ausindustry.gov.au](http://www.ausindustry.gov.au), accessed on 10 March 2003.

retain their tax exempt status and work within familiar legal structures. To date, it's just been too expensive and hard [for them] to invest here. AVCAL expects \$1 billion in new capital to enter Australia over the next five years as a result of the reforms.<sup>98</sup>

9.57 Some witnesses suggested that, notwithstanding the introduction of the VCLP, it would be useful to take another step, namely:

Governments need to implement policies to encourage superannuation funds to play a greater role in the provision of venture capital.<sup>99</sup>

9.58 This was said to be particularly relevant given that the timeline for a return on venture funds was five to ten years, so for individuals wishing to participate in venture capital 'it is best done through their super funds where they can manage the time horizon better'.<sup>100</sup>

9.59 One SME suggested that 2%-5% of Australian superannuation funds should be 'quarantined' for the purpose of 'developing smaller businesses in this country'.<sup>101</sup> It was suggested that 'the smarts... [or successful SMEs] will more than compensate for the failures that come along'.<sup>102</sup>

9.60 The committee is aware that a number of Australian superannuation funds are choosing to invest a percentage of their money into smaller companies<sup>103</sup> but it would be useful if superannuation funds were made more aware of the attractiveness of investing in research-oriented SMEs.

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98 Media release by the Australian Venture Capital Association (AVCAL) dated 12 December 2002.

99 Institution of Engineers, Australia, Submission No. 72, pp. 4-19; also see Federation of Australian Scientific and Technological Societies, Exhibit No. 18, *Australian Science: Investing in the Future*, p. 11.

100 Mr Andrew Green (Australian Venture Capital Association), Transcript, p. 394.

101 Dr Alan Ferguson (Bio Pharma Pty Ltd), Transcript, p. 567.

102 Mr Graham Heilbronn, Transcript, p. 568. Mr Heilbronn, who is President of Commerce Queensland and also Chair of a venture capital company, added: 'By way of an example, there is a 40% profit margin on the companies we are looking at [for funding by the venture capital company]—and they are coming in. There are plenty of them out there'.

103 For example, Dr Roger Lehmann, Transcript, p. 569: 'I am an established company, and we have had good success with superannuation funds. We approached one of those to take up ownership of shares within our company, and we were successful in that approach'.

## Recommendation 12

- 9.61 **The committee recommends that the Commonwealth government investigate ways to better demonstrate to Australian superannuation funds the opportunities arising from investing in Australian small and medium-sized enterprises that conduct R&D (recognising the primary fiduciary duty of the funds to maximise returns to their members).**
- 9.62 The committee notes the existence of Commonwealth government programs to encourage venture capital into innovative areas (Pooled Development Funds program and the Innovation Investment Funds program—see chapter 3). The Pharmaceutical Industry Investment program (PIIP) is another program designed to encourage venture capital into a specific industry. Whilst useful, the Institution of Engineers thought that these measures ‘have not, as yet, been enough to keep pace with our international competitors’.<sup>104</sup> The Institution considered that additional venture capital could be encouraged by:
- ... allowing R&D tax deductibility for interest and dividends earned by investors in trusts and/or Funds set up specifically for investment in R&D.<sup>105</sup>
- 9.63 The Institution’s proposal would build on the existing Pooled Development Funds (PDF) Program which enables registered PDFs and their shareholders to be taxed at a lower rate on income generated through PDF activities (paragraph 3.44). Whereas the PDF program applies to SMEs in general, the Institution’s proposal would apply to *R&D activities only*, and would extend to all sizes of firms. The committee considers that the proposal warrants more detailed examination.

## Recommendation 13

- 9.64 **The committee recommends that the Commonwealth government consider a scheme, along the lines of the current Pooled Development Funds Program, to enable Funds or trusts whose sole purpose is to invest in R&D activities, to receive concessional tax treatment.**

104 Institution of Engineers, Australia, Submission No. 72, p. 8.

105 *ibid.*, p. 9.

## Improving financial incentives for individuals to conduct R&D and commercialise the outcomes of research

9.65 In order to improve the financial incentives for individual researchers and entrepreneurs to establish companies based on R&D outcomes, many witnesses called for:

... more generous tax treatment of share options, deferral of taxation (including capital gains tax) and other measures to encourage and support individuals to take up equity in start-up companies based on innovations.<sup>106</sup>

9.66 The Business Council considered that:

... the incentives for researchers to take the risks involved in spinning off ideas are not adequate. Incentives need to be changed so that they ensure public research institutions actively promote IP spin-offs and stronger personal incentives to motivate the entrepreneurial instincts of researchers are needed.<sup>107</sup>

9.67 Other witnesses supported the view that an important way to 'induce' scientists to 'bring their science out to form a company around it' is to provide those scientists with 'equity in their own company'.<sup>108</sup> Further, the committee was told that, whereas the issue of share options used to be just for top managers, many firms 'are now rolling those share options right down through the infrastructure'.<sup>109</sup>

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106 Group of Eight, Submission No. 34, p. 5; also Pfizer Pty Limited, Submission 65, p. 12: 'It is generally in the interests of all parties that the inventor/s remain associated with the early stages of commercialisation of IP... To reward their continued commitment and to encourage entrepreneurship, the inventors and key staff are frequently offered or seek substantial equity in the start-up company, often in the form of share options. It is imperative that such equity be treated for tax purposes as notional and not subject to the tax laws until realised... [because] many start-up companies fail'.

107 Business Council of Australia, Submission No. 58, p. 2.

108 Dr Kevin Fahey (Pfizer), Transcript, p. 368; also see: The Warren Centre for Advanced Engineering, Exhibit No. 6, Text of the 2002 *Warren Innovation Lecture*, delivered by Dr James Fox (Vision Systems Ltd), p. 12; and Federation of Australian Scientific and Technological Societies, Exhibit No. 18, *Australian Science: Investing in the Future*, p. 5.

109 Dr Kevin Fahey (Pfizer Pty Ltd), Transcript, p. 368.



## Recommendation 14

9.68 **The committee recommends that the Commonwealth government make further changes to employee share option arrangements to boost the financial incentives for researchers to commercialise their research outcomes (possibly by removing the requirement to pay tax upfront on the issue of shares in a start-up company).**

9.69 In relation to capital gains tax (CGT), the government's recent changes were welcomed, with one witness stating:

The recent changes whereby you can elect to only have 50% of the gain taxed, assuming you hold the shares or the investment for more than 12 months, is positive... [and] is good in international terms as well.<sup>110</sup>

9.70 However, the Federation of Australian Scientific and Technological Societies thought that a tapered CGT rate should apply to high-technology industries for the reason that:

Typically, new high-tech companies do not show profits for several years because of the need to reinvest in growth. As a result, venture capitalists can only reap returns by exiting the investment and realising capital gains.

A tapered CGT rate, reduced annually in proportion to the length of time the asset is held (as in the UK), would attract investment without destabilising either the long-term prospects for high technology industry (due to speculative movements of capital), or long-term social equity. This tapered rate should be strictly targeted to high technology industries.<sup>111</sup>

## Recommendation 15

9.71 **The committee recommends that the financial incentive for researchers, and those commercialising research outcomes, be improved by considering the introduction of a tapered capital gains tax in relation to assets held in new high-technology companies (whereby the tax is reduced in proportion to the length of time an asset is held).**

110 Mr Sergio Duchini (Deloitte Touche Tohmatsu), Transcript, p. 194.

111 Federation of Australian Scientific & Technological Societies, Submission No. 51, p. 6.

## Improving government tender and purchasing processes

9.72 The concern of some SMEs that they ‘do not get a significant share of federal government business’<sup>112</sup> was said to reflect the fact that the government was:

... not particularly supportive of its native industry in its own procurement decisions. We will often choose products from overseas when there is a product that is equivalent, and sometimes better.<sup>113</sup>

9.73 Further, it was said that Australian government departments do not appreciate the importance of encouraging SMEs to undertake research to meet the needs of those departments:

You can read *Backing Australia’s Ability* or any of those documents, but when you go and deal with a government department most people would never have heard of it.<sup>114</sup>

9.74 Yet the government can provide ‘the first step that a company needs in the commercialisation process, that is, a first customer, a reference site, a place where they can do trials and things’.<sup>115</sup>

9.75 The Australian Business Foundation called on governments to ensure that their purchasing policies foster the involvement of SMEs<sup>116</sup> and an SME noted that:

The Commonwealth government is in a powerful position to foster business innovation by designing tenders and tender processes that are conducive to innovation.<sup>117</sup>

9.76 Similarly, the Institution of Engineers called on the government to act as an ‘informed client’ in ensuring that it purchased ‘innovative solutions’ because:

Government can take a really important lead role here in being an informed buyer. When you look at how much the government spends in defence industries, in roads, water infrastructure and all the other infrastructure such as telecommunications, yes, it is very important that the

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112 Mr Brand Hoff (Thiri Pty Ltd; and Chairman of the Knowledge-Based Economy Board), Transcript, p. 586.

113 Mr Martin Harwood (Tower Software Engineering Pty Ltd), Transcript, p. 592.

114 Mr Roger Martindale (The Distillery Pty Ltd), Transcript, p. 593.

115 Mr Brand Hoff, *op.cit.*, p. 585.

116 Ms Narelle Kennedy (Australian Business Foundation) and Ms Catherine Livingstone (Australian Business Foundation), Transcript, pp. 290-291.

117 Wave Global, Submission No. 15, supplementary submission.

government deliberately tries to push the boundary but it must be informed in doing so.<sup>118</sup>

- 9.77 The committee was urged by an SME to encourage ‘government research institutions [to] push as much research as possible into the private sector’.<sup>119</sup> In this regard, attention was drawn to United States government procurement programs that support small business. Specific mention was made of the Small Business Innovation Research Program (SBIR), which ensures that a portion of federal R&D contracts are awarded to SMEs.<sup>120</sup>
- 9.78 Under the SBIR program, a number of United States federal departments and agencies (including Defence, Energy, Health and Human Services, and Transportation) are required to reserve a portion of their R&D funds for award to small business. These agencies designate R&D topics and invite proposals. Following submission of proposals, agencies make SBIR awards based on small business qualification, degree of innovation, technical merit, and future market potential. Small businesses that receive grants begin a program which involves several phases and, ultimately, leads to commercialisation of research results and the use of private sector or non-SBIR federal funding.<sup>121</sup>
- 9.79 The committee notes the potential benefits of the SBIR, including the potential for such contracts to assist small businesses attract additional private sector support and to grow. With reference to experience under the SBIR, one SME stated that:
- If you have the US government as your first contract before you are even incorporated, the angel money falls out of the sky.<sup>122</sup>
- 9.80 A program of this type might help to ‘breakout IP that is locked up in government institutions’.<sup>123</sup> Also, an SBIR-type program would

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118 Mr John Boshier (Institution of Engineers, Australia), Transcript, p. 425.

119 Wildlife Management International Pty Limited, Submission 60, p. 5.

120 Dr Ben Greene (Electro Optic Systems Pty Ltd), Transcript, pp. 591-95.

121 Information obtained from the web site of the United States Small Business Administration: [www.sba.gov/sbir/indexsbir-str.html](http://www.sba.gov/sbir/indexsbir-str.html) accessed 23 April 2003.

122 Dr Ben Green, *op.cit.*, p. 591.

123 Dr Greene, *op.cit.*, pp. 593-594: This would be ‘very healthy for the economy and very health for the country, because you break out IP that is locked up in government institutions which, although they are innovative and perform very well, just do not deliver the return to the economy’.

demonstrate the commitment of the government to small business, noting the remarks of one SME that the government:

... could send the message to our whole economy, and it does not have to use billions of dollars to do it. The body language of [the government] is incredibly important in this country; it is much more important relatively than it is in the US.<sup>124</sup>

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## **Recommendation 16**

**9.81 The committee recommends that the Commonwealth government facilitate the involvement of small and medium-sized enterprises in government tender and purchasing processes by:**

- **incorporating a weighting within those processes which recognises the need to promote innovative activity; and**
- **investigating the establishment of a competitive small business set aside program, modelled on the United States Small Business Innovation Research Program, in which government agencies would be required to contract a portion of their R&D funds to small and medium-sized enterprises.**

## **Reducing regulatory barriers to business R&D**

**9.82** The committee notes the concerns of witnesses about regulatory barriers to R&D investment that were outlined in chapter 8. The Australian Nuclear Science and Technology Organisation (ANSTO) stated that:

A more consistent regulatory system would be an international competitive advantage for Australia. Different regulations across State and Federal jurisdictions complicate compliance and in doing so raise costs to business and reduce the return on investment. Relevant areas of regulation include consumer protection, dangerous goods and standards.

In addition, greater consistency or homogenisation of regulation with the USA and the European Union (EU) would reduce business and research costs. The process of registering products and devices through the Therapeutic Goods Administration, for example, could be made more

efficient and effective by further strengthening recognition agreements between Australia, the USA and the European Union.<sup>125</sup>

9.83 The committee concurs with this view. Further, the committee considers that regulatory provisions should be reviewed, not only to minimise barriers to innovative activity, but to actually incorporate incentives for research and the take-up of new technology, for example, ‘innovation in pharmaceuticals would be stimulated by the provision of larger Pharmaceutical Benefit Scheme [PBS] payments to the first new drug in a class of drugs’<sup>126</sup> or by the introduction of ‘a stratified reimbursement system depending on the urgency of the medical need for the drugs’.<sup>127</sup>

9.84 Action along these lines would stimulate pharmaceutical research by large international corporations and SMEs, for both are affected by the existing PBS pricing structure:

I think the issue for Australian companies developing [pharmaceutical] IP is that if they get it on the market here they also suffer the same low prices that we do as a multinational corporation. The issue is around reward for innovation.<sup>128</sup>

9.85 The committee was told that ‘new health regulations and environmental objectives can provide an incentive for Australian industry to carry out more R&D or require that it does so,’<sup>129</sup> for example, having to meet a prescribed legislative target for reducing CO<sub>2</sub> emissions can stimulate R&D in this area.<sup>130</sup> The committee considers it essential that every effort be taken to ensure that Australian regulations actually foster, not impede, the conduct of research and take-up of new technology.

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125 Australian Nuclear Science and Technology Organisation, Submission No. 52, p. 7.

126 *ibid.*

127 Prof. Graham Macdonald (Merck, Sharp and Dohme), Transcript, p. 334.

128 Ms Sara Panzer (Merck, Sharp and Dohme), Transcript, p. 338.

129 Australian Nuclear Science and Technology Organisation, Submission No. 52, p. 7.

130 Prof. Ian Rae, Transcript, p. 104-111; also Dr Cook, Transcript, p. 14: ‘The R&D initiatives supported by the Australian Greenhouse Office has been of particular interest regarding efforts to reduce energy, to recycle waste and to reduce carbon dioxide production... A New South Wales government initiative focused on reductions in energy consumption, particularly electrical energy, has also been welcomed’.

## Recommendation 17

- 9.86 **The committee recommends that the Commonwealth government minimise regulatory hurdles for businesses to conduct and take-up R&D by:**
- **promoting greater regulatory consistency across all tiers of Australian government;**
  - **encouraging international harmonisation of regulations, especially with respect to Australia's major trading partners, and when negotiating new trade agreements; and**
  - **ensuring that Australian regulations facilitate research and the take-up of new technology.**
- 9.87 While not directly a regulatory issue but rather one bearing on the cost of accessing government-held information, the committee considers that governments, both Commonwealth and state, should make every effort to reduce the cost to businesses of obtaining information from governments. A good illustration concerns access to spatial information which, in the Commonwealth's case, is available at the cost of transferring the information but, in the case of the states, is charged at the cost of acquisition. The minerals industry described the Commonwealth's approach as 'a very positive thing to do'<sup>131</sup> while the current state policies were described as 'a significant impediment to the growth of our industry'.<sup>132</sup>

## Recommendation 18

- 9.88 **The committee recommends that the Commonwealth government, through the forum of the Council of Australian Governments (COAG), improve the public's access to spatial information by encouraging the states to make their spatial data available to the public at the cost of transferring the information, rather than at the cost of acquisition.**
- 9.89 In relation to the future of the pharmaceutical industry in Australia, companies, both large and small, called for the Pharmaceutical Industry Investment Program (PIIP) to be extended beyond its current expiry date of July 2004 because this would demonstrate the

131 Ms Sarah Vandermark (Australian Mineral Industries Research Association International), Transcript, p. 263.

132 Mr Peter Woodgate (Royal Melbourne Institute of Technology), Transcript, p. 139.

Commonwealth government's commitment to the long-term future of the industry in Australia<sup>133</sup> and 'raise Australian science on the radar screen' of head offices.<sup>134</sup> It was claimed that licensing agreements may bring in significant payments<sup>135</sup> and that Australia could become 'a base for Asia and the rest of the world'.<sup>136</sup> The Productivity Commission's recent review of PIIP found that it:

... has been effective in stimulating R&D and, to a lesser extent, value added in production. It has also had broader benefits for the capabilities of the industry, for example, by shifting R&D to more complex areas.<sup>137</sup>

9.90 The Productivity Commission recommended a modified pharmaceutical support scheme focussed wholly on encouraging R&D and:

... open only to pharmaceutical firms with products listed on the PBS; [to] have several entry and exit points for participants to allow for the 'vicissitudes' of drug breakthroughs; [to] have competitive entry based on beneficial activity that would not otherwise occur; [to] have a duration of five or six years; and [to] maintain capped funding.<sup>138</sup>

9.91 The committee is sympathetic to the continuation of a modified PIIP scheme along the lines suggested by the Productivity Commission.

## **Improving accounting standards and practices so as to better recognise the importance of R&D**

9.92 Some witnesses expressed the view that 'the innovative aspect' of business activity should be 'reported' in company accounts.<sup>139</sup> R&D

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133 Dr Kevin Fahey (Pfizer Pty Ltd), Transcript, pp. 365-367.

134 *ibid.*, p. 361.

135 Prof. Graham Macdonald (Merck, Sharp & Dohme Pty Ltd), Transcript, p. 339.

136 Mr John Latham (Pfizer Pty Ltd), Transcript, p. 367.

137 Productivity Commission, *Evaluation of the Pharmaceutical Industry Investment Program*, January 2003, available online at: [www.pc.gov.au/research/studies/piip/finalreport/piip.pdf](http://www.pc.gov.au/research/studies/piip/finalreport/piip.pdf), accessed on 12 May 2003.

138 *Australian R&D Review*, February 2003, p. 7.

139 Prof. Chris Fell (Federation of Australian Scientific & Technological Studies), Transcript, p. 23: 'You have all heard of the triple bottom line: financial return, community impact and environmental impact. We believe that the innovative aspect should also be looked at and reported on;' also Australian & New Zealand Association for the Advancement of Science, Submission No. 37, p. 3: 'One initiative which may be desirable would be a

activity should be accorded ‘its true value in accounting terms’, said one firm,<sup>140</sup> and ANZAAS stated that the annual reports of companies should be required to itemize their investment in R&D, for:

If R&D were routinely documented it would be easier for shareholders to question directors on progress in this field.<sup>141</sup>

9.93 The government was urged to ‘support international standards for the valuing of IP in company accounts’ and to adjust Australian accounting standards ‘so that R&D expenditure is reported in internationally comparable ways’.<sup>142</sup> The Chief Scientist expressed support for moves by the Australian Institute of Company Directors and the Australian Institute of Commercialisation to raise the importance of innovation by finding ways of:

... treating the innovation assets... the same as the bricks and mortar... [that is,] to treat intangibles with the same rigour as they treat tangibles.<sup>143</sup>

9.94 The committee notes that Australia is committed to the adoption by 2005 of accounting standards issued by the International Accounting Standards Board. This will facilitate the ‘harmonisation’ of accounting standards. At the same time, the committee thinks it would be useful if company accounts and reporting mechanisms could indicate the nature of innovative activity undertaken by those companies.

### Recommendation 19

- 9.95 **The committee recommends that the Commonwealth government, financial bodies and businesses harmonise Australian accounting standards to ensure that:**
- they are not at odds with our major competitors;
  - they are able to show the value of intellectual property held by a business; and
  - they are able to indicate the innovative activity of the firm.

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change in company reporting requirements such that investment in R&D has to [be] itemized and explained in annual reports’.

140 S Hudson & Associates, Submission No. 12, p. 4.

141 Australian & New Zealand Association for the Advancement of Science, Submission No. 37, p. 3.

142 Australian Industrial Research Group, Submission No. 53, p. 3.

143 Dr Robin Batterham (Chief Scientist), Transcript, p. 469.



9.96 The committee notes that the R&D tax concession is aimed at influencing company behaviour by reducing the after-tax cost of R&D activities. However, a major international corporation told the committee that ‘the key decision-makers that control and manage the R&D function are generally motivated by key performance indicators not related to income tax expense.’<sup>144</sup> The company added that:

Tax expense tends to be managed independently by the finance function and is rarely factored into the R&D budget or the performance measurement process.<sup>145</sup>

9.97 In order to make the R&D tax concession benefit more visible and meaningful to those within companies responsible for setting and allocating R&D budgets, GlaxoSmithKline (GSK) and Pricewaterhouse Coopers suggested that it be transformed ‘into a legal form which allows the benefit to be recorded as operating income for accounting purposes’, without actually converting the concession into a cash grant.<sup>146</sup>

9.98 This proposal would involve AusIndustry issuing an ‘R&D entitlement’ or credit to the company, which could be recorded as operating income, but the credit would be offset against the company’s tax expenses. The economic benefit of the concession would therefore be recognised as income, rather than simply as a decrease in tax expense, and this could then be allocated amongst various departments within the company. The benefit of this proposal is that it would:

... put the benefit directly in the minds of the business managers, instead of tax managers, by directly reducing the cost of R&D to those managers, and by positively impacting before tax KPIs. Initial research into the likely effect of this proposal suggests the benefits could be dramatic.<sup>147</sup>

9.99 The suggestion by GSK and PricewaterhouseCoopers was strongly supported by participants in a roundtable meeting of large companies, with one representative stating that:

In a business where the R&D decisions are effectively made by business managers, as opposed to senior management of

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144 GlaxoSmithKline, Submission No. 26.1, p. 19.

145 *ibid.*

146 *ibid.*

147 *ibid.*

the company, there is enormous benefit in the proposal that is being put forward because the individual business unit managers in the current environment do not see the tax concession benefits as flowing through to their bottom line, and that influences their decision making.<sup>148</sup>

- 9.100 The committee considers that the GSK proposal may stimulate greater recognition, particularly within major international corporations, of the benefits of undertaking R&D in Australia. The proposal would not distort company results and involves minimal additional cost to the Commonwealth.

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### **Recommendation 20**

- 9.101 **The committee recommends that the Commonwealth government, in order to stimulate greater recognition within companies of the benefits of the tax concession, allow the R&D tax concession to be treated by the company receiving it as a benefit to be recorded as operating income for accounting purposes (and offset against the company's tax expenses).**